NAVAL WAR COLLEGE REVIEW

Naval War College Review Advisory Board

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Our Cover: *The BAR Man*—a Marine in the first wave of the 19 February 1945 assault on Iwo Jima fires his Browning automatic rifle in a cover painting (and on the reverse, a pen-and-ink sketch) by Colonel Charles Waterhouse, U.S. Marine Corps Reserve, Retired. Colonel Waterhouse was a rifleman in the Pacific War, and from 1972 to 1992 he was the Corps' artist in residence; see page 124 for a notice of his *Marines and Others*, which collects his work about Marines and his other favorite subjects. (Painting and sketch reproduced by the kind permission of the artist.)

"In short, I admire the professionalism of the Marine Corps. . . . [Being] a Marine is a way of life. It's a commitment to being the best. . . . That's why there aren't any ex-Marines, and why 'First to Fight' isn't a motto but a sacred pledge."

President's Notes

SINCE ITS INCEPTION, the Naval War College has benefited from the contributions of officers from other services assigned to Newport as faculty members and students. In 1886, our second class at the College included two Marine Corps officers among the twenty-one students; and over the years, the Corps has sent many of its finest leaders to learn and to teach about naval warfare. We are much the better because of them.

The *Naval War College Review* is the scholarly professional journal of all three sea services, so it is appropriate that this issue's cover features Charles

Rear Admiral Stark was commissioned in 1965 at the U.S. Naval Academy, studied at the University of Vienna as a Fulbright Scholar, and earned a doctorate in political science at The Fletcher School of Law and Diplomacy, Tufts University. He has served on the Navy Staff, the National Security Council Staff, and as Executive Director of the Chief of Naval Operations Executive Panel. His sea service has included command of USS *Julius A. Furer* (FFG 6), USS *Leahy* (CG 16), and, from 1994 to 1995, the Nato Standing Naval Force Atlantic, deployed in the Adriatic Sea. He assumed the duties of President of the Naval War College in June 1995.

Waterhouse's painting of a Marine on the black sand beach of Iwo Jima, and that several of its articles address Marine Corps topics. The Marines have been our brothers-in-arms since the birth of our services more than two centuries ago.

I come from a big family that included one brother a year older than I and another a year younger. I know what brothers are like—and I've got the scars to prove it. But even though we spent a lot of energy trying to beat the tar out of each other, we always stood together against the kids up the block or any other outsiders. That's a pretty good description of how the brotherhood of the Navy and the Marine Corps operates too.

Let me recount an incident with one of my "brother officers" just after I had been selected for flag rank but while I was still a captain. I had to go to the FBI Academy at Quantico, Virginia, to hear a lecture, and I was late when I drove onto the Marine Corps base that surrounds Quantico. Passing the rifle range, I got stuck behind a car poking along at twenty-five miles per hour even though the speed limit signs authorized thirty-five miles per hour. At the first stretch of dashed road-stripes, I accelerated and passed that car.

As soon as I pulled back into the right lane, this driver went nuts! He immediately hit me with his high-beam headlights, began honking his horn, and tailgated me all the way through the gate at the FBI Academy. When I parked, his car whipped in next to me, and a very agitated Marine major jumped out, introduced himself, and got right up in my face, chewing me out for speeding.

I tried to point out that I had obeyed the posted signs, but he was hearing none of that. What particularly galled him was that I had directly disobeyed the commanding general's written order that forbade driving faster than twenty-five miles per hour in the area of the rifle range. He was neither amused nor appeased by my remark that I had not spotted the lance corporal handing out copies of the general's instruction when I got off the I-95 exit ramp. Indeed, as you might imagine, the conversation quickly went downhill into an argument about my lack of leadership and his lack of a brain. We parted no closer to agreement than when we began.

Later (and calmer), I reflected on this incident. It occurred to me that my brother officer's actions might be understandable if I saw them from his background, which expects everyone to know and obey orders, rules, and instructions—with no exceptions or excuses. While I might disagree about whether my driving had broken any rule, I had to admire the major's tenacity and insistence on high standards by someone he thought had exceeded the speed limit by ten miles per hour.

I like the fact that Marines set high standards for themselves and those around them, and that they consider nothing less as acceptable. I see this on base, where

Marines insist on proper salutes and happily provide lessons if a subordinate needs them, and where Marines *always* have properly fitted uniforms that they wear with great pride.

I like the way Marines march. Sailors don't march very well, but Marines do—*always*—because of how they are trained. When Marines complete basic training at Quantico, Parris Island, or San Diego, they can march, they can shoot, and they have a pride in themselves and the Corps that is unsurpassed anywhere in the world. The Marine Corps does this by concentrating on what is important: discipline, drill, knowledge of the service rifle, and understanding the history and tradition of the Corps.

George Will once wrote that Marines "cultivate an ethos conducive to producing hard people in a soft age." I like the sound of that phrasing, and it's true. Marines stay in shape. They work hard at physical readiness, and if there are one or two Marines who are overweight, they have been well hidden.

Marines are also tough organizationally. They have only one boss, the Commandant, so they speak with one voice: what the Commandant says, goes. Before meeting with any outsiders, the Marines always get together, decide what their position is going to be, and never break ranks in the bureaucratic battle. Some people might portray this as intellectual rigidity, but I can attest to its effectiveness.

Equally, the Marines are direct to the verge of bluntness. When the Commandant put out his Planning Guidance, he didn't ignore or talk around problems, he didn't put off tough decisions, and he didn't say "Let's study it some more." He said he was *tired* of studies, so where he could he *gave* the answer as to what should be done. He also named who was responsible and stipulated the date for that person to report back on how the job would be done. I *like* that.

The Commandant also can count on the fact that Marines obey orders. They don't whine, or ask why, or do a little "Mother may I?" dance: give a Marine a job to do, and he goes out and does it. And they are *stubborn*—whether in combat, where, once committed, they fight *forever*, or in Pentagon budget battles, where they just make it feel like forever to all the rest of us. But it works! The V-22 Osprey program has had a stake driven through its heart more times than Bela Lugosi, yet it's rising out of the coffin.

The Marine Corps also makes the most of the press. They knew a long time ago that the press could be enormously useful in bringing their story to the American public, and that the enlisted troops are any service's greatest public relations asset. So the Marines put their people out front with all the media, where the reporters and camera crews can see them in action, and it pays off.

In short, I admire the professionalism of the Marine Corps. It is more than working hard and doing your job well—all of the services do that. Rather, being

a Marine is *a way of life*. It's a commitment to being *the best*, to dedicating yourself to the Corps and its ideals. That's why there aren't any ex-Marines, and why "First to Fight" isn't a motto but a sacred pledge.

Whether afloat or ashore, on famous battlefields or unnamed skirmish grounds, in heat or cold, Marines have distinguished themselves by their bravery, tenacity, love of country, and loyalty to one another.

Here at the Naval War College, Marines have made their mark in setting high standards and fighting for the truth as they have seen it. They have been our brothers in the quest for intellectual excellence for more than a hundred years, and I am pleased to see their contributions acknowledged in this, their scholarly journal, as well.

J.R. STARK
Rear Admiral, U.S. Navy
President, Naval War College
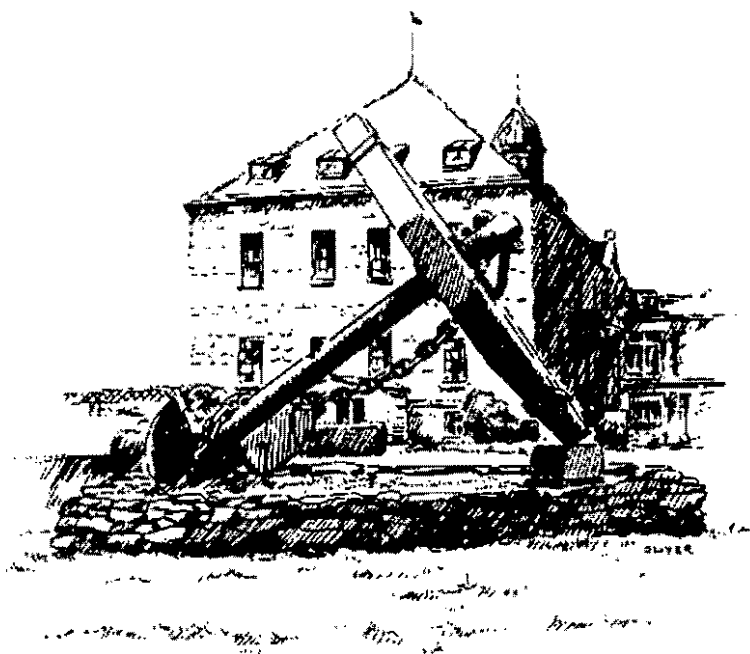
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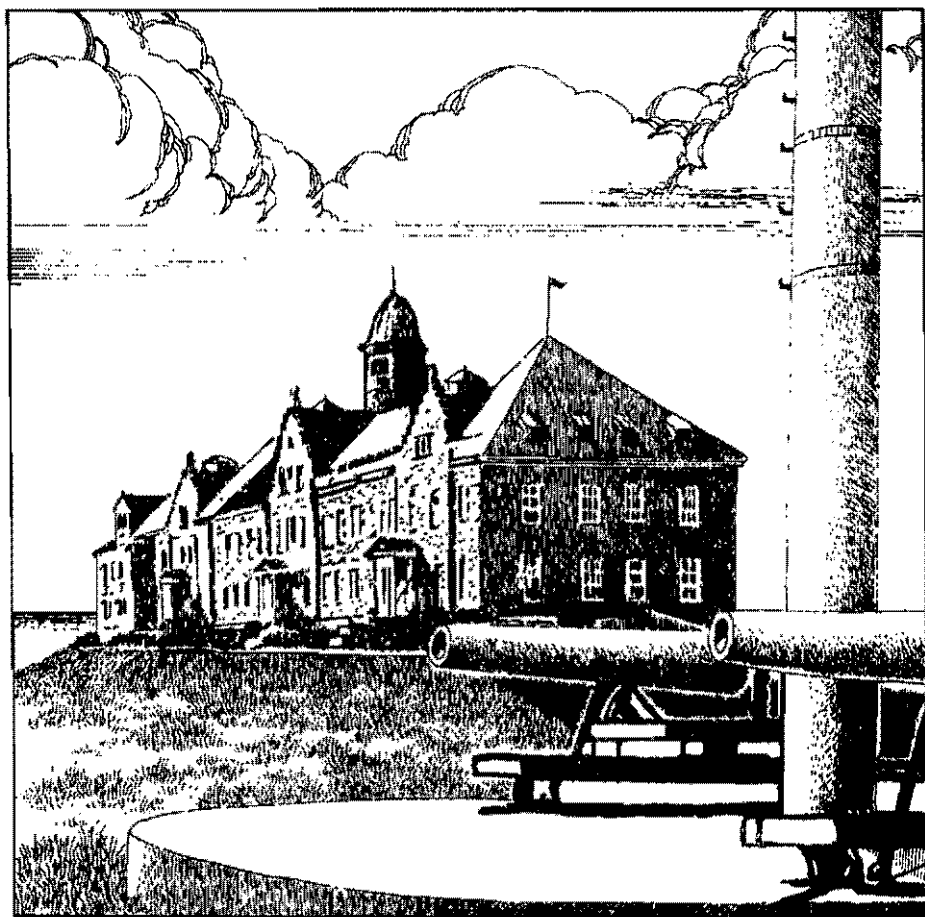
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Planning for Tomorrow's Conflicts
A Recipe for Success

General Richard I. Neal, U.S. Marine Corps

A RECIPE FOR SUCCESS—CIRCA 1597: Lou Holtz tells a story that may have applicability to our current process of determining what's best for the nation and its armed forces, and could give us some insight into this complex process. There was once a very successful king in his declining years who wanted to record his "recipe for success" to ensure that his subjects could carry on his legacy without having to suffer through the same "learning curve." He felt the best way to accomplish this was to gather together the kingdom's elders and have them convene a council which would document their lessons learned and provide guidance for future generations. After much deliberation, and about one year later, the elders met with the king and presented him with three large volumes of manuscript. After reading the manuscript, the king praised the elders for their efforts, declaring that it truly captured the essence of his reign. However, it was simply too long and involved to be considered a working document. "People just won't take the time to read it!"

General Neal was commissioned in the Marine Corps in 1965 upon graduation from Northeastern University. He served twice in Vietnam, returning to earn a master's degree from Tulane University. Before promotion to brigadier general in 1989 he commanded a howitzer battery and 5th Battalion, 10th Marines; served on air-ground exchange duty with Marine Aircraft Group 36 on Okinawa; attended Marine Corps Command and Staff College and the National War College; and was on the U.S. Central Command staff. During DESERT SHIELD/STORM he was Deputy for Operations at Central Command, and in 1992 commanded the Haitian humanitarian relief effort at Guantanamo. He was Commanding General, 2nd Marine Division, from 1992 to 1994, becoming Deputy Commander in Chief/Chief of Staff of U.S. Central Command in August 1994. Promoted to his present grade on 19 September 1996, he assumed the duties of Assistant Commandant of the Marine Corps on 27 September of that year.

The king then selected a special group of senior elders and gave them the task of condensing the work, making it "more user friendly." Six months later, the inner circle returned and handed over a one-volume manuscript. Again the king congratulated the wise men on their dedication and efforts, but he felt it was still too long. Once again, they were sent away to streamline the guidance. Finally, three months later, the elders proudly presented the king with a single piece of parchment. The ruler beamed as he read the page. With great bravado he pronounced that the elders had indeed accomplished their daunting mission. This "one-pager" truly captured the essence of his rule and prescribed a blueprint for many generations to follow so that they might enjoy the same success. On it, in large print, were the words: "There ain't no free lunch!"

The Continuing National Security Debates

As you are aware, the Department of Defense has recently completed the lates   eration in the continuing debate on the security of our great nation. The Quadrennial Defense Review (QDR), mandated by the Fiscal Year 1997 Defense Authorization Act, was based on a recommendation of the Commission on Roles and Missions. The review will occur at the beginning of each presidential term as a comprehensive examination of the nation's military requirements, to include functional areas such as strategy, force structure, human resources, infrastructure, readiness, intelligence, and modernization.

Following on the heels of the QDR is the National Defense Panel (NDP), tasked with an independent assessment of the QDR process and final recommendations. In addition, the NDP has been chartered to develop an optimal force structure that permits both forward deployment and credible crisis response, and includes considerations such as conventional threats across a spectrum of conflict, non-traditional (asymmetric) warfare, terrorism, information warfare, and weapons of mass destruction. The fundamental purpose of these deliberations is to help the executive branch, legislative branch, and American people decide what our armed forces should be capable of achieving, how they should be structured, and what funding is required. Both groups were tasked with the very difficult and mammoth endeavor of crafting a "recipe for success" for our nation's security.

In the same vein as Lou Holtz's story, one can imagine the president and leaders of Congress examining the QDR's long hours of staff work, voluminous studies, comprehensive computer models, and exhaustive final report, and saying: "This is all magnificent; just wonderful; we appreciate everything you've done; but you know, this is quite a bit for busy people to comprehend. We had hoped your principal recommendations would have been made more concisely." Of course, the NDP would learn from this reaction by our nation's leaders, so their report,

undoubtedly, would be equally thoughtful yet considerably shorter. We can picture our nation's leaders, after viewing this much-abbreviated NDP report, telling them: "What a tremendous accomplishment this is; thoroughly researched and carefully presented; however, we were hoping your bottom-line conclusion could have been put in a way everyone could immediately understand and afford."

So, having heard this, perhaps it's not very far-fetched to imagine a select group of post-NDP strategic planners saying to themselves: "Ah-ha! We now see what he have to do." After much careful study and reflection, taking into account the excellent work done by the services and Joint Staff, this group would combine all the detailed scenarios, the learned prognostications, and their best judgments into a one-page report. And do you know what the vital report about the future military requirements of our great nation would say? "There ain't no free lunch!"

Future Military Requirements: Three Themes

As we seek to continue valuable discussions on the nature of our future military, there is one guiding principle we must follow and one caution we must heed. Our central principle must be, in all we do, what's best for our country. That's an ideal that must be leavened with the caution that—as with the infamous lunch alluded to above—freedom isn't free. As we look through our foggy lens into the future, we need to be humble as well as thoughtful. If history teaches us anything, it is that we are going to be surprised: our vision will turn out to be distorted and myopic, our best guesses often will be wrong, and we will frequently be disappointed in our expectations. My speculative three themes should be considered in that light and, I hope, can be used to spark one's imagination and spur further discussion regarding future U.S. military requirements as well as those of other nations with similar values and concerns.

The first theme of my unpretentious forecast is that *we face a world of constant conflict*. Challenges to our national security, arms control, deterrence, and warfighting are as real during this period of transition—a time lacking its own identity and which we call "the post–Cold War" era—as they were in the past. The facts speak for themselves. Depending upon how you count them, anywhere from fifteen to twenty-five internal and international conflicts have been going on every day of every year since the end of World War II. The same number of crises and conflicts have been occurring since the collapse of the Berlin Wall and the demise of the Soviet Union as prior to those momentous events. Today, while the Cold War superpower contest is over, the world may be a more peaceful place, but it is not a world at peace. At the risk of being labeled a pessimist, I see nothing on the horizon that tells me anything will be different tomorrow.

Among the world's regimes that presently have goals and objectives inimical to ours are Iraq, Iran, and North Korea, and each commands sizable military forces. Howeʳ.er, those three nations are scarcely the only powers that can pose a serious threat to the regional peace and stability so important to our global interests. More than fifteen countries in what used to be called "the Third World" now have significant numbers of main battle tanks and modern aircraft, and virtually all of these states have been involved in some form of combat during the last decade. Of even greater concern is that twenty or more countries are developing or acquiring weapons of mass destruction and the long-range strike systems to deliver them. Though many states have ratified the Chemical Weapons Treaty and are making sincere efforts to rid the world of chemical and biological methods of warfare, I submit that others are not taking such steps, nor do they intend to do so. In today's very active international arms bazaar, virtually any nation or sub-national group can purchase almost every kind of weapon or military system and the training required for their employment. The disconcerting evidence is there for all to examine.

Related to this is my second theme, which suggests that *we face a world in which those who may wish us harm are as capable as they are ruthless.* Considerable discussion has taken place, and there are many who believe that the coalition victory in the Gulf War signaled the arrival of a "military-technical revolution" or a more pervasive "revolution in military affairs" that has fundamentally changed the nature of warfare. Advocates of this viewpoint speak of "precision engagement, full spectrum dominance, information superiority, and systems of systems." These individuals, who unquestionably embrace technology, envision future armed forces of the United States with flawless, instantaneous, and comprehensive knowledge of the battle space; great numbers of precision-guided munitions; and technology-assisted leadership at all levels of the chain of command. They see a future with capabilities that will allow the U.S. military and its allies to win rapid, overwhelming, and nearly bloodless victories, because this changed nature of warfare will decisively favor the side that fields the most advanced technology.

Before I present an alternative view, let me place my comments in perspective. It is obvious that technological advances will have an enormous impact on *how* future wars are fought. Indeed, we in the U.S. military not only recognize that fact—we are counting on it. For example, the mobility and firepower afforded us by equipment that is at the cutting edge of technology (e.g., air-cushioned landing craft, advanced amphibious assault vehicles, the Joint Strike Fighter, and the MV-22 tilt-rotor aircraft) are fundamental to the Marine Corps' concept of operations, "Operational Maneuver from the Sea." So make no mistake: the pursuit of a technological edge is essential. However, *why* future wars are fought will probably be no different than it has been in the past.

We must seriously reconsider the tendency to rely exclusively on technology to provide us with solutions to all our problems, but more importantly, we must be unbiased in the answers to important questions we must ask ourselves. Are we misleading ourselves by overselling the capabilities technology provides in the crucible of combat, where Clausewitz's friction and fog-of-battle, Boyd's decision cycle, and Murphy's Law of Misfortune play so great a role? Could we be misunderstanding the circumstances and future methods of warfare? This latter possibility, sometimes labeled "the asymmetric threat," envisions a foe who operates quite differently from the enemy our technologies and force structures are being optimized to defeat. Instead of opposing our strengths, such a foe would attack our vulnerabilities. We have in the past underestimated our enemies and often paid dearly for our delusions. The character of our enemy should be a driving concern.

Numerous writers have sketched our most likely adversary as culturally and morally different from contemporary, Western-world-organized military forces. These opponents are envisioned as rising among "street-fighter" nations and non-state groups of the world, prepared to wage war in unconventional fashion using small groups whose "warrior values"—or lack thereof—make them less concerned about humanitarian limitations, innocent civilians, rules of warfare, or even their own casualties. These would be dangerous enemies, against whom technological superiority would be less decisive. There would be no large tank formations to destroy; no "power grids" to take down; and no discernible targets to acquire, track, and target on an everything-can-be-seen-and-hit battlefield. From Vietnam to Somalia to the Balkans, we have repeatedly seen how crafty, determined opponents can offset, negate, and even exploit our reliance on technology.

Moreover, there is another aspect of technology that should greatly concern us. Future enemies will themselves be able to employ, at least in limited numbers, advanced military systems appropriate to their own purposes. The proliferation of cellular telephones, laptop computers with built-in facsimile and e-mail capabilities, satellite communications and navigation systems, as well as fire-and-forget munitions, suggests that they will not be available solely to one side in future conflicts. Many advanced weapons have become so simple to operate that very little training or education is required. Ease of acquisition and a constantly diminishing cost of capabilities will enable an "inferior" force to remain a threat. Skillful employment of "off-the-shelf" and arms-market weapons and equipment to serve the requirements of a combat force could make "technological dominance" by the more lavishly outfitted side unlikely. Finally, it must be accepted that the technological playing field, which has for so many years been our own, can and will be leveled.

My third theme is that *future warfare will bring new challenges*. For example, widely available, and at reasonable prices, will be near-real-time, high-resolution satellite imagery of any battlefield, accompanied by expert commentary and evaluation of force activities. Equally, the global nature of communications is making television a poor man's intelligence service. Saddam Hussein watched the Cable News Network to try to ascertain what the coalition was planning, and the media was ubiquitous throughout Somalia—including on the beach when we landed. The communications revolution almost guarantees that tomorrow's media will be virtually omnipresent—on both sides of a con-flict—able to communicate with their main offices and transmit to the world without any support from, or interface with, military forces. One of our founding principles, freedom of the press, an ideal for which many have paid the ultimate price and for which we may have to continue to place our lives in jeopardy, will nonetheless present commanders with a conundrum.

Many new challenges posed by these developments are obvious and need not be elaborated upon, but one of them deserves explicit comment. Strategists have long emphasized the importance of popular support for a democratic government's goals and policies, as did Harry Summers in his book *On Strategy*. Today, one manifestation of this appears to be the growing belief that the American people will not endure casualties suffered in the application of foreign policy for protecting and fostering our national interests. One need simply recall what happened to our Lebanon policy after the Beirut bombing or to our Somalia effort after the failed Ranger mission. Consider the immediate and post-conflict influential effects that images of civilians killed in the camouflaged Baghdad bomb shelter and scenes from the "highway of death" out of Kuwait City had on the American people. While friendly and noncombatant casualties have always been a concern, today even enemy combatant causalities may affect the way Americans wage war. Contemplate the horror that many Americans professed when it was revealed that some enemy soldiers may have been buried alive in their bunkers during the Gulf War.

Our enemies know this, so we must anticipate that a ruthless opponent will strike to inflict—by whatever means at their disposal—casualties on American forces. They also may employ hostages, subject noncombatants to attack, or endanger their own civilian populace, so long as those deaths advance their cause by being visibly displayed to the American public. Such brutality and the exploitation of our aversion to all casualties may become graphic examples of how technology can be employed to our disadvantage.

The three themes suggested above are not all-inclusive, but they are among those we should consider as we continue the debate on what's best for the nation. We must contemplate the implications they portend.

Implications

As we attempt to look through our "foggy lens" into the future, the three themes suggested above should help us answer two of the most important questions we must ask ourselves. What kinds of threats, and what types of environments, do we foresee our forces confronting? How can we maintain not merely technological but operational superiority, so that we will successfully execute our missions and win? However, we should not worry much about getting the answers to these two questions "exactly" right. Instead, we must realize that prognostication is not an exact science and consider the implications for our future forces and defense posture. It seems to me, as I contemplate historical evidence and current trends, that a few implications are more probable than others. We will have to deal with what I call "the Tyranny of the Four 'Ts.'"

Future crises are likely to arise swiftly, leaving little *time* for mobilization. They will be come-as-you-are conflicts, in which rapidly responsive combat power will be far more influential than large but slowly arriving elements. Military forces will have to be self-sustaining, capable of action across the spectrum of operations, dominant in their immediate environment, and discriminating in their application of force. They will need to accomplish their missions quickly, decisively, and with as few casualties as possible. The "tyranny of time" could be one of the greatest threats these forces may face, for the American center of gravity may well be—as Clausewitz professed—the will of the people.

Always important to how we fight will be *technology*. We must, as stated previously, harness technology in such a way as to make us more effective, efficient, and protected. We must seek, however, to focus on "equipping the man, not manning the equipment." In addition, we should appreciate that our enemies also will be employing technology in ways appropriate to their objectives while looking for ways to exploit the vulnerabilities in, and especially our reliance on, instruments, methods, and "things." We must not expect an opponent to oblige us by planning his fight to suit our weapons. We must not allow the unbiased "tyranny of technology" to become an end in and of itself.

Our leaders must be strategic pessimists, planning for ultimate flexibility in our *tactics*. When we are required to apply military force to a situation, it will seldom be when, where, and how we might prefer. Regardless of how we structure our force, train our people, and deploy our units, we must do so with an eye toward being able to adapt as the situation changes or when we meet a set of unexpected circumstances. One of our inherent strengths is that we have always placed a great deal of trust and confidence in the valor and ingenuity of the young men and women who serve this great nation—and rightfully so.

Military commanders have always sought to develop a great sense of initiative in their subordinates lest they fall prey to the "tyranny of set-piece tactics."

Finally, there will never be enough time, people, hardware, or money—the *treasury*—to be ready for every eventuality. Naturally, we would hope to find the most low-cost, high-payoff, widely versatile investments in equipment, training, and operations; but the nature of the world is that the only certainty is that things will continue to change. A wise investment today may require serious reevaluation tomorrow, and decision makers will have to make difficult yet sagacious choices in achieving the right balance among many competing requirements. While a budget-driven National Security Strategy would not be in the best interest of the nation, we must continue to shape our future military forces within the fiscal realities brought about by the "tyranny of the treasury."

A Recipe for Success—Circa 1997

The idealist in us would like to think that we will accurately envision a future for which we can develop an exact recipe for success. The realist in us knows history has repeatedly proven that actual events are stubbornly resistant to unfolding along the path we set for them. We achieve a balance between the two when we plan for future requirements considering prevalent themes, with judicious consideration for the potential implications of our decisions. More importantly, we must accept that we will not get it exactly right. Our greater strength will be the flexibility to adapt—over time—the ingredients in our recipe that may have to change.

No matter how prescient our decisions prove to be, there will be some areas in which we will have to assume greater risks. While some proposals on how to proceed would be plainly foolish and some ideas might be better than others, I am sure that neither the QDR nor the NDP, nor any other group's or person's report or recommendation, can possibly be immune from criticism. What does matter is that we continue to debate our evolving requirements without preconceived answers or detrimental parochialism.

Our recipe for success may be many pages long, but our legacy might still boil down to a "one-pager." In making decisions about where to invest in the future of the nation's armed forces, the most important thing for all to keep in mind with regards to national security is: "There ain't no free lunch!"

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The Navy RMA War Game Series

April 1995–November 1996

Captain Edward A. Smith, Jr., U.S. Navy

I N THE WAKE OF DESERT STORM and the phenomenal success of the
coalition forces, it appeared to a considerable number of observers that the
United States was experiencing a "revolution in military affairs," or "RMA," a
sharp discontinuity in warfare like that represented by the blitzkrieg of 1940.
The introduction of stealth, precision, and information technologies had clearly
brought at least a dramatic change in the implements of war—that is, a "military
technical revolution." What was less clear was whether DESERT STORM reflected
a radically new form of warfare, one that optimized these new technologies as
the blitzkrieg had radio and mechanized armor, or whether it amounted to an
application of new technologies to old tasks and concepts. How else might the
new technologies be applied? Which other technologies might have a similarly
dramatic military application? To what degree would the U.S. armed forces need
to rethink their concepts of warfare?

To address such questions as these, between April 1995 and November 1996
the military staff of the Chief of Naval Operations Executive Panel (the CEP),
in conjunction with the Office of Net Assessment of the Office of the Secretary
of Defense and later the Assessment Division of the Navy Staff, conducted a
series of six coordinated, seminar-type war games. The collective effort, which
was designed to examine various aspects of a potential RMA and their
implications for the U.S. Navy, was based on the work of three task forces of
the Executive Panel: a "Strategies for an Uncertain Future" group, which assessed

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the Navy Field Operational Intelligence Office, in the Office of the Secretary of
Defense, on the staff of the Commander in Chief, Atlantic Command, and Supreme
Allied Commander Atlantic, as Deputy Director for Intelligence in the Office of Naval
Intelligence, and as an assistant naval attaché. Captain Smith is currently a staff member
of the Chief of Naval Operations Executive Panel.

future trends and their implications for naval warfare; a "Ship Design Task Force," which looked at the possibilities for radical changes not only in ship design but force structure as well; and the "Innovation Task Force," which examined the process of doctrinal and technological innovation within the Navy and the prospects for encouraging revolutionary thinking in that organization.

During the series, two additional CEP task forces were established that likewise contributed to the course of the gaming. The assignment of the first of these was to study "Navy Support to the Land Battle," examining Army and Marine Corps requirements for naval support in a precision warfare environment. The other's purview was "Information Assurance," the requirements and vulnerabilities of information warfare.

Objectives of the Game Series

Throughout the project there was continual discussion and collaboration among the CNO, the CEP task forces, and the gamers, with task force members themselves participating in some of the games. At the outset, however, the orientation and objectives of the game series were worked out by the Chief of Naval Operations, the Director of Net Assessment, and the military staff of the CEP. The CNO, the Director of Net Assessment, and many members of the Executive Panel urged the gamers to break new ground, to try innovative approaches to the RMA problem. Underlying this creative encouragement was a bluntly practical directive from the CNO: to remain realistic and operational in both the problems examined and the solutions proposed. This guidance and direction produced a focus and a methodology that was, in three specific ways, unlike those of previous games organized to deal with RMA issues.

Earlier games had concentrated primarily on identifying technologies that might have a revolutionary impact on warfare. For example, which information technologies would enable forces to move tactical data from sensor to shooter in the most efficient manner? As several panel members observed, this had often caused games to focus on the applicability of some undefined set of technologies to present-day warfare problems, whereas it would be wiser to think about what new tasks such capabilities might make possible, or what other technologies ought to be considered as well. Having as its specific purpose to address such larger matters, the 1995–1996 RMA game series reversed the previous approach. It asked first what would the U.S. Navy need to be able to do in the uncertain future described by the Strategies task force. Then it posed the question, what kind of revolution in thinking and approaches to warfare would the service need to meet these requirements? Only subsequently would the gamers investigate what kinds of technologies and capabilities might be called for to implement the revolution.

Similarly, close attention was urged to the question of how the RMA might contribute to preventing and containing conflict. War gamers were not to consider deterrence and control of conflict as "lesser included cases" of warfighting but were to treat them instead as actions that might require quite different operational approaches and capabilities. Such peacetime and crisis applications of RMA ideas and technologies were of particular concern to the Navy because of their importance for effective forward naval presence. Close examination of peace and crisis operations would also usefully raise the broader issue of how an RMA might contribute to the political and diplomatic utility of U.S. military forces.

Third, the war gaming also took account of the fact that a revolution in *naval* thinking and warfare had already started. The white papers ". . . From the Sea" (1992) and "Forward . . . from the Sea" (1994) had asserted that the Navy–Marine Corps team could have a decisive *direct* impact on events ashore. This view was a radical departure from the Navy's Mahanian tradition of *indirect* influence there, and it clearly had significant implications for the future. One of the game's challenges, then, was to refine avenues by which the strategic concepts of "Forward . . . from the Sea" might be implemented. However, as the game series proceeded, the draft of a new white paper by the Chairman of the Joint Chiefs of Staff, "Joint Vision 2010," appeared, and its ideas were likewise incorporated. They became the basic model, in the context of the games, for implementing the Navy's strategic concept.

The outcome of any war game that looks into the future is very dependent on two variables. The first has to do with its critical assumptions about military capabilities and scenario events. The farther into the future one looks, the more conjectural the assumptions must be. Second, the background and character of the participants affect the results obtained. Although every attempt is made to select the right players for a given scenario, the quality of the lessons learned greatly depends on their imagination and individual expertise. The insights derived from these or any games, therefore, do not reflect absolute truths or necessarily accurate predictions about the future but, rather, plausible outcomes that planners and decision makers might usefully consider.

Force Structure. In the design of any war game, critical decisions have to be made as to the set of "pieces" with which the gamers are to play—in classic terms, the "order of battle." Its suitability to a game's scenario and underlying purpose strongly affects the quality of play and the analytical usefulness of the outcome. In these games the players were to deal with the total force structure of the naval service; what that in turn would be was largely a function of the "setting" (that is, how far in the future the players were to consider themselves

to be) and what levels of national defense spending were assumed to have existed in the intervening years.

The time frame chosen for the entire series was 2020. Considerable thought was given to using 2010, the date associated with the Chairman's "Joint Vision," but designers concluded that a jump of only fifteen years into the future would not produce naval forces much different from those of the present. It was estimated that about 85 percent of the fleet of 2010 is already in commission or under construction. By pushing the setting further out, a substantially different force, one incorporating a wide array of new technologies and concepts, could be posited.• However, to ensure realism, the designers limited themselves to units and capabilities that might be expected to be operational by 2020—those derivable from naval or defense research already underway in 1995, or that off-the-shelf commercial technology seemed likely to produce over the next twenty-five years.

The chosen force structure, likewise, had to be affordable within Navy and defense department budgets that were assumed not to have increased in real terms over the same quarter-century. The costs of various alternatives were calculated, and trade-offs were made, both between new systems and among the demands of platform construction, weapons, and maintenance. The result was a pair of possible force structures representing fundamentally different approaches, each of which was deemed achievable within the projected budgets. One was an evolutionary continuation of the current (1995) programs; the other was optimized for precision and maneuver warfare. The latter specifically reflected trade-offs in favor of such capabilities as arsenal ships, "fire-and-forget" precision weapons, targeting and analysis systems, and the stocks necessary to sustain strike operations from the sea. Notwithstanding "real world" constraints, however, players were encouraged to point out capabilities that, whether or not they might meet acquisition or budgetary criteria, would have been useful or even critical to their operations. These results were later used to suggest ways in which naval research and development programs might be used to better effect, and to support a dialogue with industry about civilian technologies that might be applicable to the evolving military problem.

Scenarios. A second basic task of game designers is to devise the "world" in which the hypothesized interactions will take place: the entities involved, their purposes, and the underlying or external forces that will act upon them in the course of play. For a strategic-level seminar war game, designers must define the

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*The scale of this difference is most obvious in retrospect. The fleet of 1995 had substantially the same character as that of 1980. The F-14s, *Los Angeles*-class SSNs, and *Nimitz*-class carriers of today's fleet had all entered service by 1980. By contrast, the fleet of just ten years earlier had been mostly of World War II vintage, and its "sunrise systems" are now being rapidly retired from service.

"actors" (whose parts might be performed freely by players, represented by a control group, or simply "scripted"), generate recent "historical" data to establish the geopolitical situation at the outset, and plan a series of major "events" to channel the course of play. The designers must produce a scenario that is matched to the backgrounds of the players and will lead them to deal with issues pursuant to the overall game objectives. They must also choose a level of detail and complexity that allows useful analysis but avoids artificiality or skewed results (by, for instance, inadvertently excluding vital considerations). Finally, they must define a cycle of "moves" that sequence the course of play—each move comprising situation briefings, discussions and decisions by players, and control group consultations.

The original guidance for the RMA game series directed, as noted above, that play focus on operational problems that might reasonably be expected in the world of 2020. The work of the CEP task force on "Strategies for an Uncertain Future" provided the geopolitical assumptions, while the Navy white papers established in outline the missions and warfare tasks to be examined. The Strategies group had pointed to an unstable world in which "asymmetric" foes (that is, with forces and methods of warfare substantially different from those of the United States) would challenge this nation. Such opponents might range from terrorists to major military competitors. The task force emphasized the inevitability of the proliferation of new technologies and the high probability that future foes would use these tools not only in unexpected ways but to pursue ends quite different from those of the United States.

For their part, the Navy–Marine Corps white papers had argued that the fundamental naval operational problem will remain the necessity of going "in harm's way" to project power and influence ashore. This postulate implies that an effective forward presence, able to deter would-be aggressors or provide the basis for a military coalition, will be required. It also emphasizes the significance of being able to achieve and maintain sea control and project decisive power ashore against even a well equipped major adversary.

Taking all these considerations into account, the game designers crafted scenarios that dealt with problems of peace, crisis, and war, and organized moves around three transitions: from peace to crisis, from crisis to war, and from war to war-termination. The emphasis on "cusps" reflected several recognitions. First, transitions pose the most complex challenges, inasmuch as they involve rapid changes in the tasks and objectives of the forces involved and may pose the greatest risks for forward units. Naval forces, representing (as the white papers asserted they would) the leading edge of U.S. responses in each of the transitions from peace to crisis to war and also the major residual capability once hostilities have ended, are likely to be particularly stressed by such shifts. Finally, more than

any steady phase of conflict, the transitions test the politico–military aspects of an RMA.

The designers also included a "Move Zero," a final, retrospective phase in which players were asked to return from 2020 to the present and use the insights they had gained to suggest what "should have been done" differently in the years from 1995 to 2020 to prepare for the circumstances they had encountered in the war games.

Game Play: Regional Conflict

The series began with a group of three games designed to identify capabilities, organizational modes, and strategies that might be required to implement the Navy's white papers, and to assess the limits of such RMA concepts as precision, maneuver warfare from the sea, and speed of command. In the first two games, the players representing the United States (known by convention as Blue) were divided into three teams. One used current strategies and an "evolutionary" force structure, in effect a straight-line projection of the 1995 forces; both other groups played the precision and maneuver warfare forces. However, one of the latter was urged to investigate alternative offensive and defensive applications of this precision and maneuver force, while the other was asked to explore how the new capabilities might be applied to current approaches to warfare. Before the third game of this sequence, a basic strategy had been fleshed out for applying precision capabilities to maneuver warfare, based on ". . . From the Sea"; the third game, therefore, began to assess the relative advantages of precision-optimized forces in this context and to fix the specific requirements for implementing such a force. (The results became an input to the Navy's Long Range Planners' Conference, held in March 1996.)

At the CNO's request, the first three games involved a Southwest Asia scenario, assessing what naval and joint forces could do to project effective power without immediate access to local bases. The adversary (Red) was an aggressive regional power that, in league with local ideological and ethnic allies, was threatening its neighbors. In keeping with the observations of the CEP's Strategies task force, this state was assumed to have obtained weapons and information technologies from a relatively unconstrained international arms market and to have adapted them to its particular strategic needs. Since among these needs would have been to forestall Blue intervention, the regional foe was presumed to have created a surveillance and targeting system that allowed it to attack air bases and other fixed targets in the area and ships and aircraft in the Gulf and the northern Arabian Sea. To this end, it had created what amounted to a two-tier military: a small but relatively sophisticated air, air defense, and sea force, whose primary purpose was to deny access to the area; and a much larger and less modern land

force, used chiefly to deal with neighboring states. Taken together, these capabilities posed a complex military problem, one whose effects extended as far seaward as RED's sensors and weapons systems could act, and as far inland as BLUE forces and weapons could reach. It also implied a mix of naval tasks: applications of high-technology precision warfare, certainly, but also traditional operations like evacuation of BLUE's citizens, escort of friendly shipping, maritime blockade, mine clearance, and landing significant ground forces on a hostile coast.

Players were asked to address how, in such a context, information-based precision and maneuver concepts and capabilities—as used by both RED and BLUE—would affect two basic missions of the U.S. armed forces: deterrence (preventing, containing, or controlling a crisis or conflict), and projecting decisive power ashore.

The deterrence problem was threefold. The most obvious question was, what options did the BLUE military, and particularly its forward naval forces, possess that might contain a crisis and prevent hostile actions? Investigating that issue required players to evaluate which forms of military power the foe would respect, how much of that power would have to be applied or threatened, and how quickly, if it was to have a decisive impact. In the context of game play, these deterrent options for BLUE fell into two categories: those that threatened unacceptable damage, and those that simply prevented the opponent from effectively applying its military power. Examples of the latter would be blocking RED forces that attempted to cross the Gulf, or intercepting and destroying air and missile attacks.

A second and equally intriguing aspect of deterrence appeared to be the degree to which BLUE might itself be deterred by RED, particularly RED's ability to attack any local ports and airfields opened to BLUE use and to target BLUE forces in or approaching the Gulf. Most players felt that BLUE's ability to "stand off" beyond surveillance or strike range was not a solution to this problem. Such an approach, some pointed out, might be seen by local states as evidence that the RED deterrence strategy had succeeded or that, worse still, BLUE had conceded de facto hegemony to the opponent within the effective range of RED area-denial systems. Players concluded that BLUE, in order to deter, had to demonstrate an ability to deal successfully with the foe's interdiction capabilities.

The third element examined was the reassurance and reinforcement of local allies. This form of deterrence appeared heavily dependent on the visibility of BLUE forces in critical periods of crisis—what players termed "evidence of shared risk"—and on their ability to provide protection. The latter led players to the "Catch 22" of coalition building: that land-based air and missile defense of local states requires access to local territory and at least an informal coalition between BLUE and the states involved, but that local states will not—almost *cannot*—join

a coalition or grant access without *prior* protection from air and missile threats, especially if they involve weapons of mass destruction. Players judged that the ability to conduct such a defense from the high seas—beyond the constraints of sovereignty and politics—had become a critical necessity during at least the early stages of a crisis. The principal operational problem, then, became balancing the requirement for visibility with the vulnerability of the forces so employed.

As for power projection ashore, game play revolved about two questions arising respectively from the two naval forms of projection outlined in ". . . From the Sea"—independent strike operations, and support to the land battle. How, first of all, could precision strike capabilities at sea be made "decisive"? As early as the first game, players noted that the force-multiplying effect of "precision" was more a matter of "smart" targeting than of weapons accuracy, and that a "soft" information attack could be as much a precision strike as "hot steel on target." The paramount matter was to identify the targets that were most critical or offered the most leverage in a given situation. By the third game, this view had led to a distinction between three kinds of targets: politico-military, directly influencing the actions of the regime; infrastructure, such as lines of communications, whose destruction would undermine military effectiveness; and the forces themselves. As the reader understands, each set presents markedly different operational requirements and constraints.

The second question relating to power projection was how amphibious operations could be mounted and sustained entirely from the sea. Flowing from this were a series of subsidiary questions. How would the absence of access to ports, bases, and airfields in the crisis area affect Blue's ability to seize a foothold ashore? What kind of enclave would be required if heavier army and air forces were to be brought in? How could large-scale operations ashore then be sustained from the sea? Although the emphasis was on optimizing maneuver warfare from the sea, it quickly appeared to players that the critical factor was to deliver sufficient numbers of joint forces and capabilities in the right place at the right time and then to provide them comprehensive protection and fire support from off shore. Just as quickly, players noted that even a rudimentary missile or "weapons of mass destruction" capability in the hands of a foe places these requirements in an entirely new light. Forces at sea would have to suppress that offensive strike capability in order to achieve "battlespace dominance" before amphibious operations could be launched; they would then have to sustain that dominance as well as provide informational, logistical, and fire support for a considerable period of time thereafter.

The players' assessment of these questions, particularly in the third game of this sequence, produced a loosely prioritized "wish list," divided into six categories: sea control, deterrence, strike, expeditionary and amphibious warfare, campaign, and infrastructure. Across these categories, however, certain

requirements stood out: for massive conventional firepower from the sea (for strike, support to forces ashore, and sea control), for information superiority (specifically, a comprehensive joint offensive and defensive battle management capability), and for sustainable sea-based logistics for joint operations. Each was seen as key to meeting the challenges of "...From the Sea" and "Joint Vision 2010."

Game Play: A Major Adversary

In the second group of games, the focus shifted to dealing with a foe possessing military forces of a scale and quality roughly equivalent to those the United States could bring to bear on the scene. It was accepted that such an adversary need not pose a global threat or have forces similar to those of the United States, and specifically that it need not possess a large, blue-water navy capable of challenging the U.S. Navy at sea. It needed only to be capable of effectively confronting American military power in a region of mutual concern. This shift in the focus of the scenarios also underlined two problems that had surfaced in the first group of games but had not been considered in depth: the scale and the duration of operations required to deal with a large opponent, and how a "major adversary" might capitalize on the RMA, especially by using precision and information technologies against U.S. forces.

The Navy Staff's Assessment Division was heavily involved in designing force structures for use in the second group of games. That office provided a detailed extrapolation of plans and programs to inform both straight-line and precision-optimized force structures posited for 2020, and it invented a mechanism for assessing trade-offs. In the games, each team was given a limited amount of extra "chips" to "spend" on additional systems (from a set list) it thought would be helpful in meeting the problems of the scenario; however, to obtain any more chips a team was obliged to "trade-in" portions of its existing forces. Possible new systems comprised a variety of items currently in research and development or recommended by the March 1996 Long Range Planners' Conference, as well as some highlighted by the first three games of the series. They included such systems as a vertical-firing long-range gun, a hypersonic missile, advanced mine detection gear, and extended cooperative-engagement capabilities that allow joint and allied forces to achieve synergistic collaboration with U.S. forces.

The first game of this group addressed the problems of preventing and containing a crisis involving a major power (ORANGE) capable of waging precision warfare some distance to seaward. In the scenario, ORANGE had established a blockade of a BLUE ally (which we will refer to as GRAY) using a long-distance precision strike capability and was now threatening an invasion. The BLUE goal was to neutralize the blockade and discourage the impending

aggression. Inasmuch (the briefing materials postulated) as dispatching land-based forces to the ally was likely to constitute a casus belli, BLUE efforts were to be limited primarily to operations by naval forces and by long-range air power based at home. Consequently, players faced a threefold problem.

First, shipping was to be protected deep inside ORANGE's area-denial zone, which meant that BLUE escort operations would be under a threat of precision attack. BLUE, therefore, would need to establish the kind of "full dimensional force protection" envisaged by "Joint Vision 2010"—land, sea, air, and missile—using primarily sea-based forces. It would have to sustain such protection indefinitely, and under peacetime constraints and rules of engagement. Second, not only naval forces but the local ally itself had to be defended, visibly and credibly, from air and missile strikes and even airborne and amphibious assault—and all of these things would have to be done without access to local facilities. Finally, BLUE forces would strive to reduce the possibility of escalation, whether by ORANGE or GRAY. In part that meant convincing the "major adversary" that it could not hope to conquer GRAY and that any actual use of force would result in direly painful consequences. It also meant, as players pointed out, controlling the actions of the ally, especially if it was tempted to provoke ORANGE under the protection of BLUE's umbrella.

The players' deliberations on all three problems underlined the continued value of traditional warfare capabilities, especially the undiminished relevance of "mass" even in precision warfare. The questions posed by players revealed some of their foremost considerations: How much missile defense would be necessary to block a large-scale attack? Could such a number be kept at sea? How many precision strikes, against how many targets, and of what kinds, would be needed to pose a credible threat to an adversary as large and capable as the game postulated?

The second game of the series examined the problem of force projection in a major regional conflict resulting from a land invasion of a BLUE ally (which we will call GREEN) contiguous to ORANGE. In effect, players were asked to plan for major wartime operations inside the area denial zone of a powerful adversary. The first part of the players' operational problem was how to project sufficient combat strength into the area, in view of the fact that ports and airfields used to deploy BLUE forces were subject to attack, as were any concentrations of forces in or near GREEN. Moving heavy forces into the area in the face of such a threat was a very dangerous and difficult proposition, one that would require sustained, full-dimensional protection. Players observed that such protection involved a "roll-back," or blunting, of ORANGE area-denial capabilities, which was not simply a joint matter but one requiring both considerable use of national assets and extensive coordination at the national command level. Second, given the foregoing and the precision capabilities of BLUE forces, what amount of combat

power might be required? It was necessary to render aid to an ally and block the aggressor's assault without prompting a resort to weapons of mass destruction. To protect the ally, players had to address how the land battle might be supported from the sea—to ask, in effect, what a sea-based "assault breaker" might look like. The specter of escalation, however, led players to examine the use of precise conventional weapons in a strategic role and to ask how their impact might best be multiplied to achieve a decisive impact.

The final game of the series pursued a different dimension of major regional conflict. It introduced a second, nearly simultaneous, crisis elsewhere in the world, one instigated by a regional power attempting to take advantage of BLUE absorption in the first conflict. The object of this war game was, specifically, to examine the nation's ability, while heavily committed in one major conflict, to deal with a second. Taking advantage of a video link to the U.S. Naval Postgraduate School, in Monterey, California, the game designers called for four teams: two were given a Southwest Asia scenario similar to that played in the first group of games; the other two were given a different problem, in the eastern Mediterranean.

The crux here, of course, was a severe resource-allocation problem. Major forces would continue to flow to the first conflict; the players were asked for innovative ways to deal with the other one. They soon concluded that *no* major conventional land operation could be conducted in a second theater, any time soon; some entirely different approach would be required. The pairs of teams produced that alternative in different ways. Those playing the Southwest Asia scenario envisioned a precision strike campaign, combined with comprehensive protection of local allies, using Navy and Air Force assets "swung," or diverted, to the theater. By contrast, players in the eastern Mediterranean scenario relied heavily on the combat assets of major allies in Europe and elsewhere; they proposed to use BLUE's RMA capabilities, such as precision targeting, to multiply the impact of allied forces.

Insights

The RMA war game series, taken as a whole, yielded two distinct categories of insights. To begin with, recommendations arose about new technology that might be required to implement the ". . . From the Sea" white paper and the principles of "Joint Vision 2010"; these proposals (which had been laid out at the Long Range Planners' Conference in March 1996) were later carried over into the Navy assessment and acquisition process.

Perhaps more significant were new thoughts concerning the *limitations* of the revolution in military affairs itself. The first of these was that *what's good for fighting a war may not help prevent it*. It was quickly apparent to players that while stealth,

precision, and information technologies afforded U.S. forces a unique wartime ability to engage at great distance while hidden from a foe, it was close-in, *visible* presence that was critical to preventing war by deterring or containing a crisis in the first place. Such deterrence considerations could not be treated as simply a "lesser included case" of fighting a war; the two things present distinctly different requirements, as became obvious in the first war game and continued to be a factor in every game thereafter.

Avoiding enemy weapons and surveillance by stealth or submerging makes sense in wartime, but it does not obviate the need for surface forces to go in harm's way in situations short of war. Indeed, the new kinds of threats to local allies make it more essential than ever that U.S. forces go well forward and make themselves conspicuous. As choices made by players suggested, if an American RMA is to be effective across the spectrum of conflict, it must enhance defensive capabilities and survivability as much as, if not more than, offensive power.

In the games, the demands placed upon command, control, and communications (C3), especially with respect to control of forces by the national command authorities, were not uniform; on the contrary, they changed drastically with each move. Outside of actual combat operations, they little resembled the revolutionary "flat architectures" permitted by new information technologies. While peacetime operations were highly decentralized, with little national-leadership involvement, matters changed dramatically in a crisis, when direct national control was established over the military forces engaged. As crisis turned to conflict, C3 shifted to a two-tier arrangement: local commanders were given defensive freedom of action, while offensive operations remained tightly regulated, specified, and directed. Once combat began, however, the advanced C3 architectures came into their own, being clearly needed to attain the speed of command required for success. Finally, however, with war termination came a re-imposition of strict national control.

Second, *the RMA does not answer every need.* It was evident to players as early as the first game that new precision and information technologies cannot fulfill all military requirements, much less all the demands of warfare. Instead, it appeared, the real impact of precision and information technologies is in their ability to multiply the effect of the weapons carried by naval forces. In each of the war games there arose requirements to perform traditional military functions—mine clearance, escort operations, evacuation of nationals, urban and guerrilla warfare, and so on. Players inferred that while the "revolution" might let forces do certain warfare tasks more efficiently, it is not a substitute for traditional capabilities but a new kind of warfare superimposed on things already being done. "Precise warfare" gives one the ability to exploit highly specific enemy vulnerabilities in such a way as to achieve a disproportionate impact;

exactly how it might do so depends on the opponent and the exact objectives in hand.

In particular, precision is not a straightforward substitute for mass or attrition. In each game, no matter how accurate the weapon or precise the targeting, there was still an irreducible number of weapons to be delivered or actions to be taken so as to achieve the desired purpose. The difficulty was in deciding which targets, in what numbers, and with what timing, would prove decisive.

Third, *the RMA works both ways.* The work of the CNO Executive Panel's Strategies task force strongly indicates that no RMA can remain a U.S. monopoly for very long. The precision and information technologies are proliferating and will be used by others to create their own RMAs—quite possibly with the United States in mind. As the games highlighted, such local "revolutions" could pose a major challenge to the long-distance projection of military power upon which the U.S. national military strategy is—and by virtue of geography must be—based. The threat will be most immediate to fixed facilities, such as ports and airfields, then to relatively immobile concentrations of forces and materiel ashore. Naval and air forces will present an opponent with a more complicated surveillance and targeting problem, but they likewise will be subject, in varying degrees, to detection and attack. The implications were clear to the gamers: the United States must be prepared to deal with an RMA directed against itself, and sustained operations of any sort are likely to require the defeat of an enemy "system of systems" for surveillance and targeting.

The insights as to the character and limitations of an American RMA also bear on the relationship between the principles of the "Joint Vision 2010" and those of the Navy's "...From the Sea." In effect, the "Joint Vision" promises to multiply the impact of every naval unit by applying joint and national precision targeting to their high-technology capabilities. As the games suggested, this synergy will be most profound for forward naval forces, which will bear the brunt of operations for peacetime deterrence, initial crisis response, and, increasingly, the early "assault breaker" phase of conflict. However, the games further suggested that the effect might also act, and even more strongly, in the opposite direction: that is, that forward naval forces bring a new dimension to the "Joint Vision." They offer to joint forces a balanced set of options and capabilities for both high-technology and traditional combat at sea, in the air, and on land. They offer the freedom to maneuver from the sea and to apply the principles of precise engagement, full-dimensional protection, and focused logistics unhampered by constraints of sovereignty. Finally, they embody the capabilities of the "Vision" and make them visible in a manner that can help shape local security environments around the world in peace and crisis as well as war.

Where Now?

Because the Navy's 1995–1996 RMA war games were by nature an exploration of new ideas for which there was no existing model, they were designed as seminar games—structured brainstorming sessions meant to identify new problems and flesh out hypothesized concepts. Appropriately, each raised as many questions as it answered. However, as the games and the thinking progressed, the questions, the concepts, and the results became more specific. What began as seminars searching for new operating concepts became "battle problems" seeking solutions for new tactical questions. Three such questions arose that remain to be explored.

How are U.S. forces to defeat an area-denial effort? The second group of games, in particular, established that any sustained forward operations, especially ashore, will face enemy attempts to prevent access to the region, and that even the *possibility* that they might succeed would undermine the utility of U.S. forces in peace and crisis. Dealing with this challenge is likely to require a complex and highly coordinated effort at the national, theater, and joint task force levels, one directed at taking apart an enemy's surveillance and targeting capability—something yet to be attempted.

How would the United States sustain campaign operations in an RMA environment? Previous RMA discussions have seemed to assume that precision and maneuver are the antithesis of attrition, that a single devastating blow will bring an enemy to terms. To the contrary, these games continually raised serious questions of how powerful such a blow could be made and how often it would have to be repeated, if in fact it could be. In the words of one player, "What if the enemy doesn't know he has lost?" Indeed, the second group of games took this one step further, asking in essence, "How would we defeat a major foe if land warfare were not an option?"

Finally, how will the U.S. Navy support operations ashore in a precision warfare environment? In the games, threats by weapons of precision or mass destruction repeatedly obliged defensible, sea-based forces to provide an entirely new dimension of fire, logistical, and information support. The games also made clear the complexity of the problems involved, as well as the importance of coordinating Navy efforts with Army and Marine Corps experiments in maneuver warfare ashore.

Indeed, the breadth of the questions raised by the games in itself suggests deeper problems with precise, high-tempo operations. One senior player argued that the entire idea of executing national control through rules of engagement was a relic of the Cold War, one that needed to be revisited in the context of today's precision capabilities. He suggested military planning in terms of "options," self-contained sets of pre-approved and highly specific actions and

political objectives. A member of the Executive Panel, the late Professor Albert Wohlstetter, carried the observation one step further, to argue that what the expanding capabilities for precision really implied was the need to rethink the nature of deterrence itself, in peace, crisis, or war—a process that, he observed, had scarcely begun.

Each of these new questions, like those arising in the previous Navy RMA war games, has its roots in the U.S. Navy's own revolution in military affairs, outlined in ". . . From the Sea." Each focuses on the white paper's challenge: to project decisive power and influence ashore. Each seeks to apply the thinking and technology of a new age to determine how the U.S. Navy and Marine Corps will meet that challenge. One should not expect immediate and definitive answers to such questions. Rather, the 1995–1996 RMA war game series should be seen as beginning a long-term iterative process that must reach to the fleet, to innovators within the Navy and Marine Corps, to the Army and the Air Force, to national agencies, and to a larger policy community. However, one realization is already clear. In the last analysis, it may matter less that there exists an American revolution in military affairs than that others will use new technologies and thinking to challenge the United States with RMAs of their own.

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U.S. Naval Institute Arleigh Burke Essay Contest

Essays must persuasively discuss a topic related to the objective of the U.S. Naval Institute: "The advancement of professional, literary, and scientific knowledge in the naval and maritime services, and the advancement of the knowledge of sea power." Essays may be up to 3,500 words in length; three will be selected for prizes (cash and medals), and winners will be published in the April *Proceedings*. Anyone may enter. Entries to: Arleigh Burke Essay Contest, U.S. Naval Institute. 118 Maryland Ave., Annapolis, Md., 21402-5035 (contact Valry Fetrow, tel. 410-268-6110, fax 410-269-7940); deadline 1 December 1997.

Logistical Implications of Operational Maneuver from the Sea

Lieutenant Mark W. Beddoes, U.S. Navy

THE U.S. MARINE CORPS CONCEPT FOR the projection of naval power ashore is known as "Operational Maneuver from the Sea," or OMFTS. Like the Navy–Marine Corps white paper "Forward . . . from the Sea," it emphasizes the world's littoral regions as areas of potential conflict, and in turn the role of naval expeditionary forces in such conflicts. The services recognize that the availability to potential adversaries of inexpensive, advanced weapons and sensors will make traditional amphibious methods of ship-to-shore movement and lodgment ashore more risky than in the past. To reduce this vulnerability, OMFTS calls for movement from ships at sea directly to objectives inland, without pausing to build up on a beachhead. If they are to accomplish this, assault forces must be lighter and faster than they are now, and a great deal of their command, control, communications, computers, and intelligence (C4I), combat service support (CSS), and fire support (naval surface and close air) must be sea based.[1]

One OMFTS concept under development envisions small, highly mobile teams dispersed over a battlefield up to two hundred miles across as well as deep. These "reconnaissance assault platoons," or RAPs (the teams are referred to by several different names), would cover an area, identify critical targets, and engage particular targets by calling in precision fires. The idea is to achieve the combat power of a large force spread over the entire battlefield without offering a large, fixed target against which the enemy can retaliate. Most of the support for these RAPs—command and coordination, fires, and sustainment—will remain at sea.[2]

The RAP concept is an approach to one of the fundamental goals of OMFTS, reducing the buildup of forces and equipment ashore. To that end, delivery and sustainment of ground forces is to come directly from the sea, primarily by air. That in turn demands that naval logistics assets remain close enough to the shore to allow aircraft (such as CH-53E helicopters and MV-22 tilt-rotor platforms) to resupply the battlefield directly. An implication of this is that Navy ships may have to sacrifice operational and perhaps tactical mobility to sustain the Marine operation.

The objective of this article is to offer a pragmatic and quantitative measure of the degree to which Navy ships would in fact be constrained, under a wide variety of circumstances, by this new form of expeditionary warfare. Specifically, it determines the distance from the coastline that sea-based CSS assets will be able to stay and still support OMFTS operations of the size of a Marine Expeditionary Unit (MEU), involving either traditional forces or RAPs. The paper focuses on combat service support—specifically the time, distance, weight, and volume relationships involved, taking into account such factors as aircraft availability and capacity, and the effects of attrition. It does not, however, address the validity of the RAP concept itself, of C4I and fire support, or other such broader issues.

It must be remembered that if Operational Maneuver from the Sea is adopted, the Marine Corps will continue to prepare for traditional amphibious operations, sustained operations ashore, and operations other than war. Nonetheless, some aspects of OMFTS represent drastic departures from previous doctrines with respect to the demands placed on logistics, C4I, and fire support—in return for the greatly expanded area of influence of a Marine air-ground task force. For this reason, OMFTS is the focus of this paper. Since, as one writer cautioned, "A campaign plan that cannot be logistically supported is not a plan at all, but simply an expression of fanciful wishes," this article helps to determine the supportability of the concepts outlined in Operational Maneuver from the Sea.[3]

Understanding OMFTS. The primary conceptual and programmatic underpinning of OMFTS is known as "ship-to-objective maneuver," or STOM, the goal of which is to "apply the principles and tactics of modern land maneuver to

amphibious battlefields. Specifically, we will conduct combined arms penetration and exploitation operations from over the horizon at sea directly to the accomplishment of objectives ashore, without stopping to seize, defend, and build up beaches, landing zones, or other penetration points."[4] Traditional amphibious maneuver from the sea is a three-step process: maneuver in ships, transition to the shore, and maneuver ashore. During the first phase, the naval force has much more flexibility of movement than does the defending force ashore; as long as the assault force is at sea, able to choose where and when to attack, the defender must cover all possible avenues. The second step, the movement of land combat units ashore, requires a lodgment on the beach from which to operate inland. Historically, the time required to establish such a beachhead has often nullified the advantage that had been gained in the approach phase. By the time sufficient combat power is on the beach and a support area has been secured so that units are ready to commence maneuver on land, the enemy is likely to have been able to prepare a defense or counterattack.[5] It is the transition ashore that OMFTS, by means of STOM, seeks to eliminate by means of technological advances in mobility, fire support, and C4I.

These vital advances—innovative, even high-risk concepts to support OMFTS—are the province of a structured developmental effort known as "Sea Dragon." In October 1995 the Commandant of the Marine Corps established an activity (the Commandant's Warfighting Laboratory, since 13 June 1997 known as the Marine Corps Warfighting Laboratory, or MCWL) to field-test leading-edge technologies and approaches in order to identify those having promise. It was this project that proposed dispersed, lightly armed teams, moving on foot but having access to sophisticated C4I and remote, on-call fire. To survive and be effective, such teams would have to be stealthy and agile, requirements that also apply to their means of delivery and support. The MCWL is exploring methods of resupply by air that do not compromise the location of the supported units.[6]

A final preliminary necessary to an understanding of OMFTS is the nature of the littoral operating environment itself. In the restricted waters off a defended shore, naval forces face particularly challenging threats, all of which point to the advantages of deeper and more open waters farther from shore.[7] The difficulty, in waters under continual surveillance by a coastal defense system, of preventing or rapidly detecting the laying of mines, and of clearing them, forces ships to move to seaward. Further, ships have very little time to defend themselves against low-observable, high-speed antiship missiles when they are fired at the short ranges likely in the littoral. Even with such advanced defensive systems as "cooperative engagement capability," depth of fire is required for safety. Another threat, of course, is diesel submarines, which are very difficult to detect and

engage when operating close to shore in shallow water. Additionally (and this list is not exhaustive) there are small but heavily armed combatant craft, to which the U.S. Navy, with its large amphibious ships, may have considerable vulnerability.

As a result of all these threats, where traditional amphibious operations require assault shipping to approach within ten thousand yards of the beach, STOM envisions a minimum standoff of twenty-five miles when advanced assault amphibian vehicles (AAAVs) are to be used, forty miles for air-cushion landing craft (LCAC) operations, and fifty miles or more for aircraft.[8] Ideally, the aircraft carriers, assault ships, and the proposed arsenal ship would remain more than a hundred nautical miles from shore.

Assumptions, Scope, and Methodology. This analysis is broken into two main components: support requirements, and ability to satisfy those requirements. It envisions a landing force composed of a Marine Expeditionary Unit, Special Operations Capable (a MEU [SOC]); the Navy ships and aircraft that are present in a typical amphibious ready group (ARG); and a fifteen-day operation with no external support. Only the logistical aspects (that is, combat service support) of OMFTS are considered. CSS, in turn, has six functional areas (supply, maintenance, transportation, general engineering, health services, and other services), but we are concerned here primarily with the supply and transportation functions, with some consideration for the transportation requirements of health services.[9] The other functions are assumed to remain at sea, and they are not addressed. The time frame is the years 2010–2015, by when the required advances in C4I and fire support are assumed to have been achieved.

What Is to Be Supported, and How?

There are three steps in the determination of logistical requirements for OMFTS operations. The first is to establish what forces are to be supported, and the second, to find what assets (with what characteristics) are available with which to do so. On that basis, logistical support requirements can be characterized and calculations performed.

The Marine Corps deploys as Marine air-ground task forces (MAGTFs), combined-arms formations consisting of a command element, an air combat element, a ground combat element, and a combat service support element. The smallest MAGTF is the MEU(SOC). Its command element comprises a force reconnaissance company, a radio battalion, an air and naval gunfire liaison company, a communications battalion, and an intelligence company. Its air combat element, which includes a reinforced helicopter squadron and a Marine air control group detachment, contains twelve CH-46E medium-lift, four

CH-53D or E heavy-lift, three UH-1N light utility, and four AH-1W light-attack helicopters; six AV-8B vertical-takeoff-and-landing, fixed-wing, light-attack aircraft; two KC-130 tankers (on standby in the United States); and at least five Stinger hand-held antiaircraft missile teams. The ground combat element is a battalion landing team, that is, a reinforced infantry battalion. In that battalion are three rifle companies, a weapons company, an artillery battery of six M198 155 mm howitzers, a light armored reconnaissance platoon with seven light armored vehicles (LAVs), an assault amphibian platoon with twelve assault amphibian vehicles, and a combat engineer platoon.

The MEU(SOC)'s support principally resides in the amphibious ready group in which it deploys. An ARG has three or four ships: usually one amphibious assault ship of the LHD or LHA type, and at least one each of an amphibious transport dock (or LPD) and a dock landing ship (LSD). Table 1 summarizes the LCAC and aircraft-carrying capacities of these ships.[10]

Table 1
ARG LCAC and Aircraft Capacities

Ship/Class	Aircraft*	LCACs
LHD	45	3
LHA	42	1
LPD 17	6	2
LSD 41	0	4
LSD 49	0	2

* CH-46 equivalents

The LHA or LHD carries the command element of the MEU and is the primary aviation ship, with the LHD offering slightly more space for aircraft than does an LHA. The LPD has both a well deck and a limited aircraft capability. The developmental LPD 17 type will be more survivable and stealthy than current amphibious ships and therefore will be the member of the ARG best suited to go in close to shore, if needed. The LSD is primarily valuable for its well deck, from which assault amphibian vehicles (AAVs, formerly known as LVTs)—or their successors, advanced assault amphibian vehicles (AAAVs)—deploy.

In 2010–2015 the medium-lift aircraft will be the MV-22 tilt-rotor, which will have replaced the CH-46E and CH-53D. It doubles the speed of the CH-46

and quadruples its range. The MV-22 has an internal capacity of ten thousand pounds at a radius of up to five hundred nautical miles.[11] While the MV-22 has a substantial external lift capability (fifteen thousand pounds, versus four thousand for the CH-46E), it comes at the expense of speed; the MV-22 cruises at 240 knots with an internal load, but at 150 knots or less with an external one.[12]

In the air combat elements projected for 2010–2015, the CH-46Es have been replaced one for one by MV-22s, resulting in forty-eight CH-46E-equivalent flight-deck spots. This equals the maximum available in an LHA-based ARG, and it leaves only three extra spots in an ARG having an LHD instead. The Marine Corps heavy-lift helicopter is and will be the CH-53E. With an external load capacity of thirty-two thousand pounds, it is the only helicopter that can transport the LAV or the M198 155 mm howitzer. The CH-53E also allows a forward refueling capability for aircraft or ground vehicles, by airlifting a tactical bulk fuel delivery system. That system, which can be quickly installed and removed, can provide up to 2,400 gallons of fuel.[13] Table 2 summarizes the characteristics of the MV-22 and CH-53E.

Table 2
Aircraft Characteristics

Type	Radius (NM)	Internal Load Airspeed (kts)	External Load Airspeed (kts)	Troops	Payload (pounds)	Average Availability	Spot Factor*
MV-22	500	240	150	24	15,000	85%	1.7
CH-53E	250	150	130	55	32,000	60%	2.5

Source: Janet R. Magwood, H. Dwight Lyons, and John F. Nance, Jr., *Project CULEBRA: Sea Based Combat Service Support for Ship-to-Objective Maneuver (Supply and Transportation Analysis),*CRM 95-144 (Alexandria, Va.: Center for Naval Analyses, 1995).
* An arbitrary measure used in shipboard flight-deck management.

The primary surface logistical asset is the LCAC, designed to carry wheeled or tracked vehicles, artillery, and heavy equipment. An ARG will have six to eight LCACs, which can lift up to sixty tons at more than forty knots and have a range of three hundred nautical miles at thirty-five knots.[14] Although fast and highly mobile, the LCAC is both large and unarmored; it could be difficult to use in the face of opposition and will generally have to come ashore only after the AAAVs.

The AAAV, which will enter service around 2006, offers a capability much greater than that of the AAV7A1, which it replaces. It will travel in water at

twenty-five knots (versus the six to eight knots of its predecessor), providing a true over-the-horizon capability. Over land it will move at more than forty-five knots, which gives it the mobility of the MIA1 tank. The AAAV will carry eighteen fully equipped Marines or up to five thousand pounds of cargo, and it will be armed with a 25 mm Bushmaster gun and a 7.62 mm machine gun.[15] A typical MEU will have twelve AAAVs.[16]

Having pictured the MAGTF units to be supported and the assets available in the ARG, we need next to understand how this team will operate. Three schemes of employment are envisioned for a MEU(SOC) conducting OMFTS, two based upon ship-to-objective maneuver and one using the Sea Dragon concept of reconnaissance assault platoons. Let us begin with an air and sea-borne assault. The air component will insert two of the battalion landing team's three rifle companies by MV-22. In the sea component, a light armored reconnaissance platoon will deploy by LCAC, and an AAAV platoon will lift the remaining rifle company. Each of the three rifle companies will be augmented by two weapons company HMMWVs ("humvees"), inserted by air. A notional deployment scheme for this force mix will have the main body of the ARG close the shore to forty nautical miles to deploy LCACs and aircraft, while an LPD goes as far in as twenty-five miles to deploy the AAAVs. Once the LCACs are recovered, the ARG can withdraw another ten miles or more offshore, possibly leaving an LPD or another ship with a flight deck as a forward arming and refueling point. The artillery battery will remain at sea, to be inserted and extracted by CH-53E for raids as needed.

For this type of operation—that is, for a landing force of battalion landing team size or less—no combat service support area will be established on a beachhead. Accordingly, the LCACs, with their heavy-lift capacity, cannot be used to sustain the forces already deployed ashore; there will be no "beachmasters" to offload the stores and forward them. Almost all such material will have to be delivered by air. In addition, while one infantry company is in AAAVs, sufficient airlift to move one of the other two companies up to twenty-five miles a day will be required. The daily support requirements of this force, then, will be sustainment for three rifle companies and two armored units, and transportation for one rifle company.[17] The high speed and mobility of the AAAVs will allow them to operate much like helicopters; forward arming and refueling points will support both.[18] Since fuel and other combat service support will not be based ashore for a landing force this size, sustainment for AAAVs and LAVs will be delivered directly to the units. Aircraft fuel and ammunition will come from the LHA or LHD, or from a sea-based arming and fueling point.

The second force-mix scheme is an entirely air-inserted assault. Here, three rifle companies will arrive by air, with no mechanized component or HMMWVs.

This technique could be necessitated by a lack of safe surface routes or by an objective requiring too great a standoff from the beach. As in the first scheme, artillery will remain at sea and be delivered by CH-53E on demand. The logistical requirement will be to sustain the three individual companies and provide airlift to move at least two of them every day.

The third case is the most drastic departure from traditional operations and makes most use of the new Sea Dragon concepts. In this case we postulate that the BLT will consist of twenty-seven reconnaissance assault platoons with a mobile combined arms company (MCAC) made up of LAVs, AAAVs, and HMMWVs as required. The RAPs, squad-sized units, will engage critical targets with remote fires in the form of naval surface fire support, close air support, or artillery raids. Nine of these units will be ashore at any time, with the remainder either preparing for insertion or returning from the field. The MCAC will generally remain at sea, going ashore as needed and then quickly returning to the ARG. The support requirements for this force are such that each of the nine teams will require one MV-22 resupply daily.[19]

Calculating Support Requirements

Each unit requires supplies from what is known as Class I (food and water), Class III (petroleum, oil, and lubricants), and Class V (ammunition). Table 3 summarizes the supply requirements for each of the ground combat elements components, as specified by the AAAV program office and the Center for Naval Analyses. Food figures are based on three "meals, ready-to-eat" per Marine per day, each MRE weighing 1.46 pounds. Water is required at the rate of five gallons per Marine per day.

The primary means for moving and sustaining troops in an OMFTS environment will be the MV-22. Its preferred method of resupply in the field is to carry cargo externally, which allows easy pickup and drop-off (unless materiel-handling equipment or a large landing zone is available, large internal cargoes are time-consuming to unload) and minimizes the time the aircraft is vulnerable to enemy fire. External loads, however, and as noted, require the aircraft to fly slower than it could otherwise, more so than can be offset by the greater speed of loading and unloading. The MV-22's speed penalty for external loads, ninety knots, is much larger than that of the CH-53E (twenty knots). In this setting, only the small cargoes for the Sea Dragon RAPs are internal payloads, all others are external;[20] food, water, and ammunition are packaged on pallets, and fuel is transported in five-hundred-gallon bladders, of which the MV-22 can carry two at a time.

In addition to the required sustainment and troop movements, MV-22s will also be used for decoy missions; deception is a significant component of

<table>
Table 3
Daily Sustainment Requirements for a
MEU(SOC) GCE
(in pounds)
</table>

Unit	People	Class I (Food)	Class I (Water)	Class III (POL)	Class V (Ammo)	Total Wgt.
Rifle Co.	182	806	7,644 (910 gals.)	230 (30 gals.)*	842	9,292 9,522*
LAR Plt.	35	154	1,470 (175 gals.)	3,430 (409 gals.)	2,243	7,297
AAAV Plt.	47	205	1,974 (235 gals.)	14,280 (2,040 gals.)	3,259	19,718
RAP	13	57	546 (65 gals.)	0	60**	663

Source: Adapted from Magwood, Lyons, and Nance; and Ashinhurst.
* Rifle company augmented with two weapons company HMMWVs.
** At rifle-company rates; RAPs would ordinarily avoid direct combat.

OMFTS.[21] This analysis looks at two cases: no deception missions, and one deception for every three logistical sorties. The former gives an indication of upper logistical limits, while the latter represents a realistic operational support pattern.

As for the CH-53Es, due to their small numbers (four to eight) and their relatively low operational availability (about 60 percent), they will be assigned to move the artillery battery and respond to emergent heavy-lift requirements (such as recovering a disabled LAV). The helicopter's tactical forward-refueling capability is not considered in this analysis, since the needs of artillery movement will make it practically unavailable.

Tables 4 and 5 show the insertion and daily sustainment requirements for each of the force mixes. In the first three, at least two aircraft are required per mission. It is coincidental but fortunate that the insertion and sustainment requirements are so similar across the three scenarios; the extra two sorties required to insert the "air" mix have a negligible effect on the results of the overall analysis.

Supportability Calculations

What is the maximum distance offshore from which logistical support requirements can be satisfied? Formulas can be written to determine the

Table 4
MV-22 Sorties Required for MEU (SOC) Insertion

Force Mix	Internal Cargo	External Cargo	Troop Movement	Deception	Total Sorties
Air/Sea 3 Rifle Companies 1 AAAV Platoon 1 LAR Platoon	0	4	16	8	28
Air 3 Rifle Companies	0	0	24	8	32
Sea Dragon 9 RAPs (Two aircraft/mission)	0	0	18	6	24
Sea Dragon 9 RAPs (One aircraft/mission)	0	0	9	3	12

Table 5
MV-22 Sorties Required for Daily MEU (SOC) Sustainment

Force Mix	Internal Cargo	External Cargo	Troop Movement	Deception	Total Sorties
Air/Sea 3 Rifle Companies 1 AAAV Platoon 1 LAR Platoon	0	10	10	8	28
Air 3 Rifle Companies	0	6	16	8	30
Sea Dragon 9 RAPs (Two aircraft/mission)	0	0	18 (includes resupply)	6	24
Sea Dragon 9 RAPs (One aircraft/mission)	0	0	9 (includes resupply)	3	12

maximum separation between units ashore and their sea-based sources of logistical support. The basic equation to determine this distance is

$$D = \frac{(H-T) \times V}{S} .$$ (1)

where $D \equiv$ round-trip distance in nautical miles,

$H \equiv$ operational aircraft hours per day,

$T \equiv$ total unusable time (on deck, loading, unloading, or refueling) in hours,

$V \equiv$ aircraft speed in knots, and

$S \equiv$ number of sorties.[22]

We modify this basic form to take into account the number of aircraft assigned, aircraft operational availability, the number of aircraft held in reserve, differing sortie types (including external loads, internal loads, troop movement, and deception sorties), differing airspeeds of particular sortie types, air-crew flight hour limitations, and indirect flight-path routing.

For the resulting set of equations, we use a number of "baseline inputs," some of which have been referred to. First, we assume the MEU(SOC) operates MV-22s, and that their average operational availability is 85 percent (which is the anticipated operational rate).[23] Further, a maximum of two aircraft are held in reserve. At present, most MEU(SOC) operations do not hold back any for such contingency missions as tactical recovery of aircraft and personnel, medical evacuation, or emergency extraction of ground combat units. A section (usually two aircraft) is designated for tactical recoveries, but it goes about its normal operations until a requirement arises. The distances involved in OMFTS, the lack of ground transport or facilities for casualty evacuation and treatment, and the vulnerability of small, dispersed units provide some justification for dedicated, on-call aircraft.[24] This analysis looks at two cases, one with two aircraft in reserve, the other with none.

For any mission, the MV-22's expected operational refueling time is ten to fifteen minutes, external load pickup or release takes approximately one minute, internal cargo handling extends from five to thirty minutes, and troop loading and unloading require about two minutes. We therefore assume a notional thirty minutes "on deck" for turn-around. The maximum daily flight time per aircraft is eight hours, a limit based primarily on the aircrew endurance but also on aircraft maintenance requirements. As noted above, for deception sorties such as feints we examine two variants: no deception missions, as a baseline, and one deception mission for every three real sorties.

Table 6 summarizes the results for the different force mixes. The distances shown are the total separations possible between supporting ships and supported units. Figures were calculated for three cases in each mix: using all available aircraft for troop movement and sustainment; holding two aircraft in reserve for tactical recovery or medical evacuation; and both flying deception missions and holding two aircraft in reserve.

These figures all assume a "permissive" air defense environment—that is, the aircraft movements are unopposed. What would be the effect on maximum

Table 6
Supportable Offshore Distances
(Permissive Air Environment)

Force Mix		Distance (NM)
Air/Sea	Using all available aircraft	289
[1]	Holding 2 aircraft in reserve	182
	2 reserve + 1 deception / 3 actual missions	129
Air	Using all available aircraft	192
[2]	Holding 2 aircraft in reserve	188
	2 reserve + 1 deception / 3 actual missions	132
Sea Dragon	Using all available aircraft	327
[3]	Holding 2 aircraft in reserve	201
	2 reserve + 1 deception / 3 actual missions	201
Sea Dragon	Using all available aircraft	711*
[4]	Holding 2 aircraft in reserve	331
	2 reserve + 1 deception / 3 actual missions	331

[1] 3 Rifle Companies, AAAV Platoon, LAR Platoon
[2] 3 Rifle Companies
[3] 9 RAPs (Two aircraft/mission)
[4] 9 RAPs (One aircraft/mission)

*Distances over five hundred nautical miles require aerial refueling

support distance if aircraft were being lost to enemy action? To measure the impact of a non-permissive environment and of aircraft attrition, we model the aircraft as circulating between the supported unit and the ARG, subject to attack on both the inbound and outbound legs. We assume a constant probability of an aircraft being shot down for every hundred miles flown over land, a probability that does not change with distance or time; that is, its chance of being shot down is the same crossing the beach as it is two hundred miles inland, and the same on the first day of the operation (D+1) as it is on D+15. Extra missions required to recover downed air crewmen are not taken into account. We assume further that the MEU(SOC)'s operations do not fundamentally change as a result of the loss of aircraft. The aircraft losses are independently, identically, and binomially distributed, as:[25]

$$p_s = 1 - (1-p)^{Ds}. \qquad (2)$$

where p_s = probability of shootdown per sortie,

p = probability of shootdown per hundred miles traveled over land (assumed to be .01), and,

D_s = average distance flown (in hundreds of nautical miles, with fractional values when appropriate) over land per sortie.

When n is defined as the total number of aircraft sorties per day, then the expected losses (E) of all types of operating aircraft each day are given by

$$E = np_s. \tag{3}$$

To determine attrition over the course of an operation, expected losses are calculated for the end of each day, with the number of aircraft available for each following day duly decreased. (The decrement may be a fractional number.) With this number we recompute the distance calculations discussed above, and new maximum separation distances are determined. The results are presented in Figure 1, which shows the decrease in operating distance as aircraft losses increase. Table 7 summarizes the supportable distances for the different force mixes, at days one, seven, and fifteen of an operation.

Figure 1

Maximum Supportable Range In a Non-Permissive Environment
(Air/sea force mix using deception and holding aircraft in reserve)
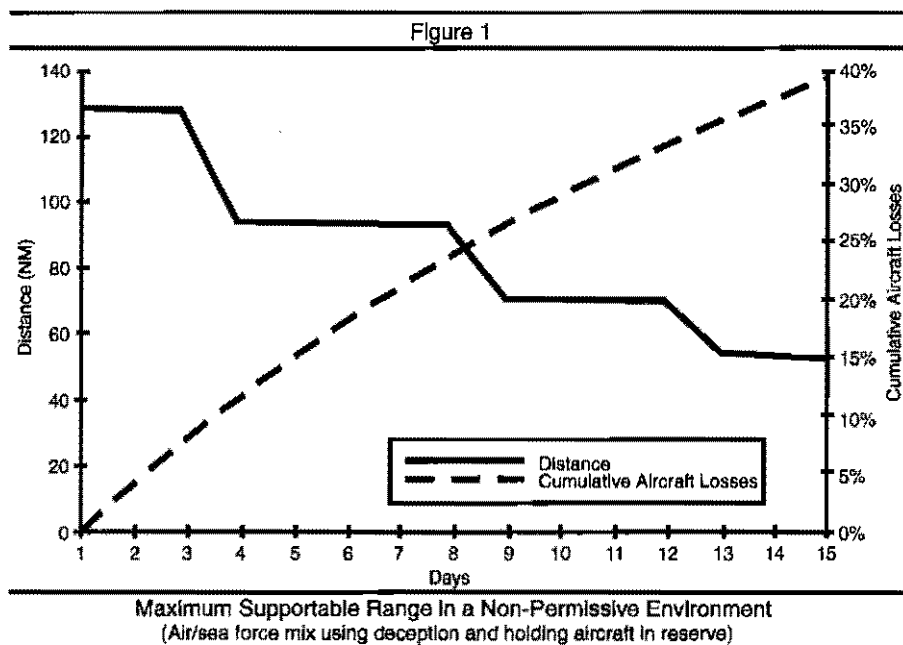
For illustration, let us work through an example, choosing as one whose aptness cannot be doubted a situation the Marine Corps itself posited as an

example in its 1996 doctrinal paper, "Operational Maneuver from the Sea." (This paper defined the Marine Corps' future operational concept.) In that illustration, a hypothetical amphibious force conducts a ship-to-objective maneuver against the eastern seaboard of the United States. The force's objective is Richmond, Virginia, and the Marines attack that city directly from the sea. However, the potential movements of the Navy ships in twenty-four hours at sea are such that the forces ashore must defend beaches from South Carolina to New Jersey.[26]

Table 7
Supportable Offshore Distances
(Non-Permissive Air Environment)

Force Mix		Distance (NM)		
		Day		
		1	7	15
Air/Sea	Using all available aircraft	296	184	93
[1]	Holding 2 aircraft in reserve	186	127	69
	2 reserve + 1 deception / 3 actual missions	131	95	54
Air	Using all available aircraft	203	138	99
[2]	Holding 2 aircraft in reserve	201	137	73
	2 reserve + 1 deception / 3 actual missions	139	75	43
Sea Dragon	Using all available aircraft	327	200	98
[3]	Holding 2 aircraft in reserve	201	136	72
	2 reserve + 1 deception / 3 actual missions	201	99	55
Sea Dragon	Using all available aircraft	711*	330	327
[4]	Holding 2 aircraft in reserve	331	329	200
	2 reserve + 1 deception / 3 actual missions	331	203	138

[1] 3 Rifle Companies, AAAV Platoon, LAR Platoon
[2] 3 Rifle Companies
[3] 9 RAPs (Two aircraft/mission)
[4] 9 RAPs (One aircraft/mission)

*Distances over five hundred nautical miles require aerial refueling

If we apply the preceding calculations, we find that to attack Richmond, which is ninety-five miles inland, an ARG would have to stay within forty-five miles of the Delaware-Maryland-Virginia coastline if it is to conduct ship-to-objective maneuver, while Sea Dragon RAPs could be inserted from a distance of more than a hundred miles at sea. These distances apply only for a permissive air environment. In the face of air defenses, however, neither of the STOM force

mixes could be supported even from the beach itself after one week of operations. The only option that could be sustained is Sea Dragon, and then only if the units are supported by individual aircraft instead of the conventional flights of two. To support the RAPs for an additional week the large amphibious ships would have to close from over a hundred miles from the beach to within forty-three.

"Influencing Events Ashore"

In Operational Maneuver from the Sea, as envisioned, there is no room for surface resupply. Logistical movement over land requires both ground transportation and secure lines of communication. Especially in view of the distances involved, these lines of communication require defense, just as a beach combat service support area would. For OMFTS the CSS must instead be provided by air. In this article we have measured the outer limits of airborne CSS of a MEU(SOC), based on the airlift assets future MEUs are now planned to have: twelve MV-22s, and CH-53Es for heavy lift support and special circumstances. Air-cushion landing craft and advanced assault amphibian vehicles will be used only for the original delivery of equipment and Marines—not sustainment.

In an OMFTS operation conducted using traditional ground forces (with light amphibious vehicles and AAAVs permanently ashore, but not the artillery), the envisioned amphibious ship stand-off of at least fifty miles will be difficult if any aircraft are diverted to deception missions or held in reserve. It will simply not be possible in a non-permissive air environment. Shifting to a non-mechanized landing force does not ease the problem, because of the increased requirement that results to move troops by air. Using reconnaissance assault platoons does help somewhat. However, because of the RAPs' small sustainment requirements, the current doctrinal practice of sending a two-aircraft section wastes a great deal of lift capability.

The distance at which the ARG can stand off shore could be increased by a number of measures having to do with increasing, or maintaining, the actual or effective number of MV-22s. If only one aircraft is sent to resupply or move a RAP (effectively doubling the available aircraft), there is a huge increase in range: even in an opposed scenario, after seven days (and the loss of a quarter of the aircraft) it would still be possible to conduct operations more than two hundred miles from the ships. (But this decreases by the fifteenth day to 138 miles.) Another approach is to increase the number of crews in the air combat element, which would allow the aircraft to be flown more than eight hours per day. However, it is likely that doing so would have negative, offsetting effects on operational availability of the aircraft or on required maintenance. A second

possibility is to increase the number of MV-22s in the ACE. Making use of the spots on the LPD would allow three additional aircraft, and the three UH-1s could be replaced with one more MV-22, at the expense of light utility helicopters. Also, the need to replace MV-22 losses must be anticipated, if the original stand-off distance is to be maintained in OMFTS operations of more than a week.

A fundamentally different approach recognizes that whereas this article considers an amphibious ready group operating independently of a carrier battle group, the presence of a CVBG (whether formally part of the naval expeditionary force or not) would offer advantages. It could reduce attrition to the MV-22s by providing escort or suppressing enemy air defenses. Also, at least if there were MV-22s assigned to the carrier, the battle group might provide additional lift or reserve lift capability.

The implication of this quantitative analysis is essentially that to realize the full value of Operational Maneuver from the Sea, there must be either a shift to more lethal landing forces having smaller logistical demands, or a sizable increase in airlift capability. The figures suggest that to maintain a safe stand-off distance from shore, maintain operational flexibility, and still support OMFTS, the Navy will need to push development of inshore combat tactics, perhaps by means similar to those used at the Marine Corps Warfighting Laboratory. Influencing events ashore is more than being able to strike deep inland with precision weapons and aircraft. It is the ability to *affect* the campaign, deep inland, with forces on the ground. Until a lighter, more lethal Marine force is feasible, it appears that the Navy would be well advised to study the problem of supporting the Marines from close to shore. Correspondingly, both the Navy and the Marine Corps need to keep the laws of logistics in mind if they are to distinguish campaign plans from "fanciful wishes."

Notes

1. U.S. Marine Corps, *Operational Maneuver from the Sea* (Quantico, Va.: Marine Corps Combat Development Command, 1996), pp. 5–6.

2. Commandant's Warfighting Laboratory, "Technology Exploration and Exploitation Plan," 1997, <http://ismo-wwwl.mqg.usmc.mil/cwl-main/html/planch1.htm>.

3. John F. Meehan III, *The Operational Trilogy*, p. 15, quoted in U.S. Marine Corps, *Combat Service Support*, Fleet Marine Force Manual [FMFM] 4 (Quantico, Va.: Marine Corps Combat Development Center, 1993).

4. U.S. Marine Corps, *Ship to Objective Maneuver*, coordinating draft (Quantico, Va.: Marine Corps Combat Development Command, 1995).

5. H. Dwight Lyons and Janet R. Magwood, *Project CULEBRA: Mini Seminar*, CRM 94-53 (Alexandria, Va.: Center for Naval Analyses).

6. Commandant's Warfighting Laboratory.

7. For an encapsulated assessment of this threat, see Yedidia Ya'ari, "The Littoral Arena: A Word of Caution," *Naval War College Review*, Spring 1995, esp. pp. 8–13.

8. U.S. Marine Corps, *Ship to Objective Maneuver*.

9. For the components of combat service support, see FMFM 4.

10. Norman Betaque, Jr., et al., *Logistical Support of Operational Maneuver from the Sea* (draft) (McLean, Va.: Naval Studies Board, 1995).

11. Craig W. Turley, "An Analysis of the V-22 in the Carrier Onboard Delivery and the Vertical Onboard Delivery Roles" (master's thesis, U.S. Naval Postgraduate School, 1989).

12. This is due not to the flight characteristics of the MV-22 but to the behavior of non-aerodynamic external leads at high speeds.

13. U.S. Marine Corps, "USMC Factfile: Tactical Bulk Fuel Delivery System, CH-53E," 1997, <http://www.usmc.mil:80/factfile/213e.html>.

14. Naval Surface Warfare Center, "Landing Craft Air-Cushion," 1997, <http://lpd17_wr.nswc.mil:80/character/baseline/vehicle/lcac.html>.

15. General Dynamics Land Systems, "Advanced Amphibious Assault Vehicle," 1997, <http://www.gdls.com:80/programs/aaav.html>.

16. Telephone conversation with Joel Ashinhurst, Advanced Amphibious Assault Vehicle Program Office, Alexandria, Va., 12 February 1997.

17. Telephone conversation with Leonard A. Blasiol, Marine Corps Combat Development Command, Quantico, Va., 12 February 1997.

18. Ashinhurst.

19. This is a conservative estimate of RAP support requirements. These units are expected to be capable of operations for several days without resupply. Also, in certain scenarios some aircraft would resupply more than one RAP per sortie.

20. As a sensitivity analysis, supportability calculations were also performed with all sustainment except fuel transported internally. The results differed by less than 6 percent. While internal loading is preferable, it does not appear to be a critical factor for the forces analyzed.

21. U.S. Marine Corps, *Operational Maneuver from the Sea*, p. 6.

22. John E. Edwards, *Combat Service Support Guide*, 2nd ed. (Harrisburg, Penna.: Stackpole Books), 1993, p. 173.

23. Telephone conversation with Paul Morgan, MV-22 Program Office, Alexandria, Va., 4 October 1996.

24. In Vietnam, 8–10 percent of such small reconnaissance patrols required some form of emergency extraction. Telephone conversation with F.J. West, Gama Corporation, 10 October 1996.

25. Thus the effects of air defense "hot spots" and operational attrition due to sandstorms, torrential rain, snowstorms, and the like are disregarded, although in such cases p_s tends to be higher.

26. U.S. Marine Corps, *Operational Maneuver from the Sea*, p. 8.

Ψ

Host Nation Support, Responsibility Sharing,
and Alternative Approaches to U.S. Bases in Japan

Paul S. Giarra

T HE U.S.-JAPAN MUTUAL SECURITY TREATY ("The Treaty of Mutual Cooperation and Security Between the United States and Japan") provides in Article VI that "for the purpose of contributing to the security of Japan and the maintenance of international peace and security in the Far East, the United States of America is granted the use by its land, air and naval forces of facilities and areas in Japan." These American bases—the aforementioned "facilities and areas"—differ qualitatively and substantively from the highly touted and more publicly appreciated financial host nation support provided by the Japanese government.

As a unique Japanese contribution, provided in kind rather than cash, bases for U.S. forces in Japan exemplify what might be called the balanced asymmetry of the bilateral security relationship. The United States provides the nuclear umbrella of strategic deterrence, offensive power projection, and global intelligence, surveillance, and command and control. Japan, in turn, offers host nation support, complementary forces for its own defense, and bases for American forces.

These bases, in any reasonable calculus, are essential to the current and future security equation of the region. They are vital to the defense of Japan, to the security and stability of East Asia, and to American security and political and economic strategy both in East Asia and globally. The value and indispensability

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of the Japanese bases—which represent, aside from the fixed-in-place U.S. forces in South Korea, the last major concentrations of U.S. military power between Guam and the Persian Gulf—balance the powerful American contributions to the security relationship, and they give substance to Japan's role as an alliance partner.

Compared to U.S. bases in Korea, which are provided for the specific purpose of forestalling North Korean aggression, bases in Japan provide strategically irreplaceable flexibility and also numerous options for U.S. military command-ers. This is especially important in light of the demise of virtually all the rest of U.S. postwar base structure on the East Asian littoral. The bases are central to the U.S. strategy of national commitment, forward deployment, and regional engagement. They are also the most important element in Japan's burden-shar-ing contribution to the bilateral alliance. After all, American taxpayers usually fund U.S. military operations, and they could do so in this case.[1] Only Japan, however, can provide the bases. Compared to financial host nation support, even at more than $5 billion a year, bases for U.S. forces in Japan are far more valuable in supporting American forward presence and military operations throughout the region.

However, on Okinawa and at airfields in the crowded Kanto Plain, around Tokyo in particular, operations at these bases have become subject to vexing political pressure from surrounding communities. It has had a corrosive, restric-tive effect, psychological and practical, on the bilateral relationship and on American sustainability. This pressure can be mitigated, debilitating operational constraints prevented, and the strategic value of the installations sustained only if the bases are perceived in Japan in a fundamentally different way than at present. How might this be achieved?

First, the bases must be understood in Japan to be directly essential to the nation's own security. Tokyo will have to internalize and reflect the conclusion that Japanese interests will be put at risk if the usefulness or viability of the bases is allowed to erode. Far too often the bases are construed or described as being important only to the United States, thereby skewing the discussion. Their role in the defense of Japan, especially their effect on regional stability and interna-tional security, is often misunderstood, minimized, or overlooked, in both Japan and the United States. This erroneous, minimalist calculation will not change until Tokyo can acknowledge and take credit for the indirect but essential regional role Japan plays in providing these bases and tangibly supporting the United States (and the United Nations) in other ways for the purposes of deterrence, crisis response, regional stability, and international security.[2]

Second, the installations will have to make positive contributions to munici-pal and prefectural economic development, and there will have to be a clear, matching local perception. This should be possible to a limited but important

extent, especially in Okinawa, where civil economic development has not completely overshadowed the effects of local U.S. expenditures. Opening the bases and integrating them with the civil economic infrastructure is one way to enhance their perceived value, both locally and in Tokyo. As we will argue, this approach, combined with traditional methods, will help to preserve the bases over the long term.

Third, the bases should be integrated into Self-Defense Force operations and plans, with SDF units stationed in what are now exclusively American enclaves. The advantages of this arrangement are numerous; it would positively affect bilateral interoperability and the effectiveness of the alliance. More importantly, it would reverse the tendency of Self-Defense officers and Japanese Defense Agency (JDA) officials to dismiss issues surrounding United States installations as exclusively American problems.

Fourth, the Okinawan base issue in particular is a bellwether of the future of American presence in East Asia and the western Pacific. The base "footprint" in Okinawa can and should be further reduced, in a carefully constrained and deliberate process. However, in doing so it is imperative that any forces and capabilities relocated from Okinawa should move northward to Japan's main islands, not eastward to Guam, Hawaii, or the continental United States.

The history of the U.S.-Japan relationship involves base consolidations, reversions, accommodations, and realignments on both sides as American requirements have waxed and waned. The end of the Cold War has brought changed attitudes and presumptions about the bases and the problems they cause for Japanese communities. Recent events on Okinawa have focused more attention than ever before on these issues; some have said that the scrutiny has put the security relationship itself at risk. How the United States and Japan resolve these problems will affect the health and viability of the security relationship and America's long-term military presence in Asia and the Pacific.

U.S. Bases: Strategic Context, Current Circumstances

As part of a larger whole, Okinawan base issues affect much larger concerns. With the United States and Japan at an important crossroads regarding bases, the Okinawan installations are significant enough politically and with respect to U.S. military capabilities concentrated there to influence the much broader question of the future of American presence.

Despite the progress being made by the bilateral Special Action Committee on Okinawa (SACO), traditional approaches hold out little prospect for anything more than a temporary patching-over of fundamental problems in Okinawa, or throughout Japan. Given the current formula of incremental returns of base property to Okinawan landowners, rising expectations there for the closure of

U.S. bases are unlikely to be fulfilled without a substantially different calculus in both Naha (the prefectural capital) and Tokyo. For the foreseeable future, U.S. commanders in Okinawa will remain under political siege. Without a reorienting and redressing of the concerns of Okinawans, it can be predicted that Japanese and American policy makers alike will be hard pressed to give appropriate attention to other major issues in the security relationship. Unconventional solutions, however, could not only mitigate Okinawan concerns but have broad applicability to bilateral base issues throughout Japan.

The Legal Basis of American Bases in Japan. Literally and figuratively, the American bases in Japan are a legacy of World War II. When the conflict ended, U.S. and Allied forces occupied Imperial Japanese Army and Navy bases on the four main islands—Hokkaido, Honshu, Shikoku, and Kyushu—and on Okinawa. On Okinawa, more than elsewhere, in addition to occupying existing bases U.S. forces constructed extensive facilities on property expropriated from local landowners.

As in Europe, in Japan the massive postwar American presence diminished only slowly. Any consideration of large-scale withdrawals ended with the onset of the Korean War and the militarization of Cold War containment. The provision of bases was made a Japanese national responsibility with the normalization of relations that marked the end of the occupation of Japan's main islands, by the security treaty signed in 1951, and by the 1954 Status of Forces Agreement, which governed their use and Japan's obligations. The arrangement was further ratified and updated by revisions of each of these agreements in 1960. The Mutual Security Treaty, signed on 19 January 1960, again updated, and made permanent, the 1951 defense pact.

Article VI of the Mutual Security Treaty allows U.S. forces to use facilities and areas in Japan for maintaining regional peace and security:

> For the purpose of contributing to the security of Japan and the maintenance of international peace and stability in the Far East, the United States is granted the use by its land, air, and naval forces of facilities in Japan. The use of these facilities and areas . . . shall be governed by a separate agreement [the Status of Forces Agreement].

Unlike in mainland Japan, the Okinawan base complex was administered as part of an American occupation, which ended in 1972 with the drawdown of U.S. military involvement in Vietnam. In the years before that reversion, Tokyo pressed to have virtually all U.S. ground forces eliminated from mainland Japanese bases and consolidated and relocated on Okinawa. Base consolidations and reductions in the U.S. presence occurred periodically during the Cold War, generally paralleling the state of international and bilateral relations.

Major U.S. Forces in Japan
As of 1 March 1997

Yokota Air Base
- COMUSJAPAN Headquarters
- Logistics/Transport hub
- 374th Airlift Wing

Yokosuka Naval Base
- USS *Independence* battle group
- 9 surface combatants (cruisers, destroyers, and frigates)
- 7th Fleet flagship (USS *Blue Ridge*)
- Major ship-repair facilities

Atsugi Naval Air Facility
- Carrier Air Wing 5 (USS *Independence* air wing)
- Light Helicopter Antisubmarine Squadron 51

Camp Zama
- U.S. Army, Japan Headquarters/9th Theater Army Area Command (TAACOM)
- I (U.S.) Corps (Forward) Liaison Detachment
- 17th Area Support Group (ASG)
- Army Medical Department Activity Japan (MEDDACJAPAN)

Sasebo Naval Base
- Amphibious Ready Group (ARG) Bravo (4 ships)
- 2 minesweepers

Misawa Air Base (northern Japan)
- 35th Fighter Wing (36 F-16 aircraft)
- Fleet Electronic Reconnaissance Detachment (2 ES-3 aircraft)
- Deployed maritime patrol squadron (Navy; 7 P-3C aircraft)

Iwakuni Marine Corps Air Station (MCAS)
- Marine Air Group 12 (EA-6B aircraft and F/A-18 aircraft)

Okinawa
- III Marine Expeditionary Force (3rd Marine Division, less detachments)
- Futenma MCAS (Marine Aircraft Group 36 with CH-53 helos, CH-46 helos, and KC-130 aircraft)

Kadena Air Base (Okinawa)
- 18th Wing (54 F-15 aircraft, E-3 AWACS, KC-135 tankers)
- 353rd Special Operations Group (SOG)

Torii Station (Okinawa)
- 1st Battalion, 1st Special Forces Group
- 10th Area Support Group (ASG)

The use of the bases is not unrestricted. Japan reserves the right to veto major American deployments into the country, operations from it, and major changes in U.S. equipment there. In an exchange of notes dated 19 January 1960, the day the Mutual Security Treaty was signed, Japan stipulated and the United States confirmed that "concerning the implementation of Article VI [of the Mutual Security Treaty, i.e., operations not directly in the defense of Japan]: Major changes of the deployment into Japan of United States armed forces, major changes in their equipment, and the use of facilities and areas in Japan as bases for military combat operations to be undertaken from Japan other than those conducted under Article V of the said Treaty, shall be the subjects of prior consultation with the Government of Japan."[3]

The seven U.S. bases listed below are also United Nations Command installations. They are supported by a United Nations status of forces agreement with the government of Japan. It is significant that, unlike other U.S. bases in Japan, they can be used, without consultation with Japan, to send United Nations forces to Korea in the event of renewed hostilities there.[4] Troops from countries of the original 1950–1953 UN Command also have access to these facilities, and they occasionally exercise that right.

- Yokota Air Base
- Camp Zama
- Yokosuka Naval Base
- Sasebo Naval Base
- Kadena Air Base (Okinawa)
- Futenma Marine Corps Air Station (Okinawa)
- White Beach (Okinawa)

Focus on Okinawa. Both in Okinawa and in mainland Japan, without the overshadowing influence of the Cold War base issues will increase in complexity and contentiousness. As mainland Japanese politics increasingly devolve to the local level, Diet members representing communities near bases find it more difficult to entreat mayors and governors to cooperate or be patient for the sake of national security and bilateral relations. Decades of spectacular growth have both reduced the local economic benefits of the installations in relative terms and placed a higher premium on prime real estate taken up by the U.S. military facilities.

Encroachment is a serious concern. Schools and houses have crowded in on facilities, especially air bases, denying them the buffer zones which, like fences, make for good neighbors. Young U.S. service members, impoverished by the rise of the yen, often cannot afford to shop or eat off base, raising frustration

levels and precluding the long-term advantages of friendly young American faces mixing with curious and hospitable Japanese. The generation of local elected officials who worked out practical solutions throughout Japan during the Cold War is passing from the scene.

Nowhere have base issues been more intensely debated than on Okinawa, the scene of the only fighting on populated Japanese territory during World War II. It was also the site of the biggest base issue of all, the reversion of the Ryukyus to Japanese sovereignty in 1972. Today, the situation on Okinawa is complicated by a number of factors, symptomatic of the complex relationship between Okinawa and the rest of Japan. The first is the minimal Okinawan cultural affinity with the rest of Japan, a land of ostensible homogeneity. Another is resentment over Japanese military excesses during the 1945 battle for Okinawa. Finally, there is a sense of continuing disproportional sacrifice, beginning with horrific civilian casualties during the war, persisting because Okinawa supports a much higher fraction of U.S. forces than does the rest of Japan. (Almost 20 percent of the main island was taken up by U.S. military facilities before the process of reductions administered by the SACO.)

The pressure on U.S. bases in Okinawa intensified with the election of Governor Masahide Ota, a political independent and university professor turned politician. His election marked the end of Liberal Democratic Party control of the Okinawan Diet delegation, and it exemplifies the trend toward more populist pressures on U.S. bases throughout Japan. Although not anti-American, the governor is a dedicated pacifist, equally opposed to U.S. forces and their Self-Defense Force counterparts. He has seized upon perceptions of grievance and long-term neglect by Tokyo of Japan's poorest prefecture to rally support for his program to reduce and eliminate U.S. bases on Okinawa. He has combined this campaign with demands for increased financial assistance for Okinawan development from the government of Japan. Ota's political influence was given a dramatic boost when a young Okinawan schoolgirl was raped by three American servicemen in September 1995.

For Okinawans like Governor Ota, beyond a profound and evenhanded aversion to both Japanese and American military forces lie three uniquely Okinawan ideological convictions: that the prefecture has been victimized by both the government of Japan and the U.S. military; that U.S. bases impede Okinawa's prospects for sharing in Japan's prosperity; and that the removal of U.S. bases is necessary for the prefecture's economic development.

The Okinawan ideological intent eventually to close U.S. bases has, since September 1995, struck a resonant chord throughout Japan, captured the attention of the Japanese media, and shaken the very foundations of the security relationship. In response, both nations have pledged to make progress toward significant base consolidation in Okinawa. The Special Action Committee on

Okinawa was established in November, and by the April 1996 summit meeting in Tokyo it had announced a plan to relocate Futenma Marine Corps Air Station and return the land to its original owners. Major details of the Futenma relocation are still to be worked out, but a number of other issues had been resolved and significant acreage returned to Japanese control as of the final SACO report in November 1996. Officials on both sides continue to meet frequently to resolve Futenma relocation and other issues, but now at a lower, less politically charged, level.

In the meantime, however, pressure continues on the Okinawan bases. The prefectural government has proposed a plan to phase out the U.S. presence on Okinawa by 2015. As recently as early February 1997, delegations from Okinawa and from the ruling coalition of Japanese political parties visited Washington to consult on the subject and to press the issue in Congress, throughout the executive branch, and with the U.S. military.

As of March 1997, the holders of some three thousand (of the total of thirty thousand) leases for land expropriated for use by U.S. facilities on Okinawa were refusing to renew them upon expiration in May. Only a hundred were actual Okinawan landowners; the rest were political activists from elsewhere in Japan, who had divided up original plots into so-called "postage stamps" of a few square meters each. In April 1997, the Diet approved Prime Minister Hashimoto's unilateral decision to force renewal of the leases. Nevertheless, this remains a serious situation, forcing the central government to strengthen its rights of eminent domain. The contretemps over leases has also seriously curtailed other important security discussions, such as the review of Defense Guidelines (designed to redefine Japan's security contributions, from simply granting permission for American actions to more active, albeit rear-area, logistical, infrastructure, and limited operational support).

What Is at Stake?

For the United States, American forces in Japan and Okinawa are emblematic of the American determination to preserve the advantages and political leverage that come from keeping its military forces forward deployed. Basing U.S. forces in Japan keeps American defensive boundaries on the Asian littoral instead of in the eastern Pacific. Strategically, the United States cannot afford to withdraw significant forces from Okinawa, for which no realistic and viable alternative exists. American influence and political and security policy in Asia depend upon these forces remaining where they are. To agree to remove or reduce those forces would put American credibility at significant risk.

Claims that the utility—and thus the indispensability—of Marine and air forces have lessened are not realistic. This applies especially to assertions that

they could easily be withdrawn to Hawaii or the West Coast of the United States, to be flown back to the region in time of crisis. In addition to their combat potential, those forces are important place-holders. They are, in effect, indicators as well as determinants of the U.S. security stake in the region. Because of their forward location, they have an important deterrent influence on the delicate strategic and psychological balance in and around Japan.

Furthermore, it is quite clear that the other nations of the region want the United States to remain fully engaged, whether to preserve regional stability, retain the balance of power, or provide for Tokyo a non-military option for Japanese security. Even Beijing, perhaps with the most to gain from an American reduction or withdrawal, is at least ambivalent about the U.S. presence, and more often than not is quietly supportive.

As a practical matter, it would be almost impossible to relocate major U.S. units elsewhere. Not only are strategic locations unavailable and available locations misplaced, but the cost of a major move would be astronomical, not borne lightly by either government.

Withdrawal of these forces would do more than complicate the local strategic situation, causing consternation throughout the region and necessitating recalculation of the American role. Their departure also would make much more problematic any subsequent political decision to reintroduce them for deterrence or crisis response in the region. Like aircraft carriers, which are easy to employ because they can move without political complications, forward-deployed forces of all kinds are relatively simple to use in a crisis, because they are already engaged in active defense.

Also unrealistic is the notion that if the Marines were to withdraw eastward, Marine and Navy forces, which would then be separated by an ocean, could still be expected to operate effectively together. Emphasis on Navy-Marine reciprocity—maritime jointness—was strengthened significantly with the emergence of post–Cold War naval doctrine. The new maritime strategy places renewed priority on power projection "from the sea." The Okinawan bases are part of a scheme of coordinated Navy–Marine Corps forward deployment; they are now more important than ever to the Marine Corps, not less so.

Furthermore, few civilians can appreciate the importance or extent of military contingency plans. Bases in Okinawa, which may seem under-utilized on a normal day, in a crisis would overflow with troops, equipment, and materiel. Based on normal, peacetime patterns, uninformed estimates of their operational utility, which fail to take account of real crisis requirements, produce woefully inadequate descriptions of the continued value of the bases and facilities in question.

The U.S. Marines. These observations are particularly applicable to the Marine garrison on Okinawa, which is currently under the most pressure. Those Marines are essential to the security of the United States. First, they are the anchor of the nation's security in East Asia—ready, mobile, powerful, self-sustaining, and flexible both politically and operationally. They are a credible force, and credibility deters aggression. Whether sea based, air transported, engaged in amphibious assault, or in garrison, they are emblematic of the American commitment to the defense of Japan, regional security, and Asian stability.

The Nye initiative—bilateral discussions in 1994–1995 that reasserted the primacy of the U.S.-Japan security relationship—underscored the commitment of the United States and the credibility of the U.S.-Japan alliance by arresting the perceptions of imminent troop reductions, which otherwise would have signaled withdrawal and disengagement. Failure to do so would have empowered Beijing and disillusioned the region. Likewise, future reductions in Japan-based Marines would negate the bilateral progress in the U.S.-Japan security dialogue and the regional political and diplomatic successes of 1994–1996, which strengthened both stability and the continuity of U.S. leadership.

Forward deployment in Japan amplifies the political and military impact of the Marines. With an amphibious ready group based at Sasebo, they are only days away from crisis spots by sea; by air they are only hours away. Transporting the same force from Hawaii or the continental United States could take weeks by sea and days by air, especially if more than one contingency were under way.

Important too is the fact that forward-deployed Marines are the first line of defense. They can respond to crisis without delay or political debate, projecting power, forcing entry, and enabling the flow of reinforcements. The early stages of the 1991 Persian Gulf crisis offered a powerful example of such strategic benefits: Marines from Okinawa (as well as elsewhere) were quickly in place to deter Iraq from attacking into Saudi Arabia. Perhaps most important, these forward-deployed Marines are convincing. The same Marines today are preventing the renewal of the kind of strategic vacuum in the South China Sea that followed the U.S. withdrawal from the Philippines. The relative calm of the Senkaku Islands dispute—in contrast to the Spratlys in 1994—can be attributed to the presence of U.S. forces nearby.[5] Only the Marines are sufficiently self-sustaining and flexible enough to respond to demands of broad geographic and functional diversity without dependence upon established facilities and extensive logistical support ashore. However, that expeditionary capacity comes at a price. Because Marine formations organize, deploy, and operate as balanced entities, redeploying even one element of the ground-air-combat support team away from Japan would impose significant operational and readiness penalties.

Marines are also assigned a major wartime role, as theater ready–reserve and crisis–response assets. In that connection, the Marine expeditionary force in the Pacific (III MEF) is crucial with respect to the Korean Peninsula. Its amphibious capabilities complicate North Korean planning and increase the effectiveness of the U.S. deterrent in Northeast Asia. On the other hand, reductions to III MEF or its relocation, let alone demobilization, would encourage recklessness in Pyongyang. No American president, in fact, is likely to propose such reductions while the potential for war on the Peninsula is near present levels or while the misreading of strategic American intentions might have such significant regional ramifications.

Japanese Interests. What is at stake for Japan? U.S. forces in Japan are critical to that nation's defense as well. The support, or lack thereof, of the Japanese government for the American bases has important ramifications for the security of Japan and for the bilateral relationship. Most broadly, Japan benefits from the global missions assigned to U.S. forces based in the country. The fact that Japanese support, in turn, is vital to their ability to operate as far away as, for instance, the Persian Gulf animates Japanese foreign policy and tends to align U.S. policies and actions with Japanese interests. They reinforce each other, to Japan's benefit.

At the regional level, deterrence on the Korean Peninsula and stable relations with China are the two most important elements of Tokyo's security policy, and both are underscored by the U.S. military forces based in the country. American expeditionary forces in Japan would also participate in evacuation and other humanitarian operations of importance to Japan. Defense Guideline initiatives are building on this basis for bilateral cooperation. If, on the other hand, Japan could not sustain sufficient public support to cope with peacetime basing requirements, it is unlikely that it would countenance the arrival of the massive reinforcements that would be necessary for a regional contingency—or the defense of the nation.

Finally, other Asian countries are gauging Japan's ability to support the alliance with the United States. They understand the potentially dramatic implications of Tokyo's failure to overcome domestic roadblocks. Ironically, they seem more willing than do the Japanese to acknowledge the broad-ranging implications for both Japan and the region of a change in the status or location of Marines on Okinawa. Policy makers in both countries, under siege on Okinawa base issues particularly, are being distracted from other important matters. If this condition endures much longer, it is likely to damage Japan's credibility as an alliance partner. On the other hand, an actual diminution of Japan's political commitment to U.S. bases would directly challenge the alliance, by undermining Tokyo's major contribution to it.

Imaginative Compromise

These strategic parameters account for the longstanding and pragmatic U.S. policy of incremental base consolidation and land reversion. By that approach, the United States will continue to look for ways to return property to its original owners; strategic considerations, however, must come first. This constraint on the U.S. side has meant in practice limiting changes to "footprint, not forces." Given the local circumstances, there is not nearly enough flexibility in this entirely appropriate but circumscribed policy to fulfill Okinawan expectations.

Present approaches alone will not overcome the obstacles to progress which exist in Okinawa, Tokyo, and Washington. Too many practical considerations stand in the way of continuing incremental land reversion. Furthermore, such conventional solutions can provide only minimal adjustments before they would seriously reduce the strategic value of the bases. Nor will they satisfy Okinawan ideological or political demands. Consequently, a number of factors make an unconventional approach advisable.

First, Okinawan circumstances are not solely ideological. Practical local obstacles have forestalled real progress on important land and base issues for years. There is no consensus among Okinawans on the bases; since the employment of Okinawans on U.S. bases is not inconsequential, there is even a sizable, largely silent constituency in favor of the status quo. With their members' livelihoods at stake, the base employees' unions want the installations to remain, and they did not participate in major demonstrations against the United States in the fall of 1995.

Also, rents for expropriated lands paid to Okinawan landowners are very significant to the recipients, especially when the land has little intrinsic value. Owners of otherwise worthless land depend upon these payments, sometimes exclusively, and they do not want the land returned. Even when the property does have value, there is seldom consensus on its future use among the hundreds of landowners of large tracts. These resist return as well, since rent received is better than the certain impasse that would follow reversion. The former Makiminato housing area is a case in point: U.S. buildings were razed and the land returned, but disagreement among Okinawan owners has forestalled development for more than a decade.

Another obstacle to traditional solutions is the U.S. requirement that the return of functional facilities must be contingent upon provision of a suitable replacement by the government of Japan. This is the case, for instance, at Naha Military Port, for which no natural alternative exists on the island. Just north of Naha, in Urasoe, plans are underway for an artificial harbor, but there is little support for military relocation there.

These local but important factors strengthen the case for an unconventional approach. Indeed, the inherent contradiction between Okinawan practical motivations and the political and military realities, and the conflict between local ideology and regional strategy, can be resolved by imaginative compromise. The basis for such compromise exists in the considerable store of natural good will that endures on Okinawa. It is significant that Marines held a day of reflection on Okinawa after the September 1995 Okinawan rape incident, and that the October 1995 demonstrations against U.S. bases did not call for an end to the security treaty. More to the point, on two occasions Okinawan demonstrators prevented the burning of an American flag by protesters from the mainland.

There is room for compromise, given sufficient imagination and certain fundamentally positive political preconditions. First, the security relationship has to be kept healthy enough to withstand the inevitable strains of working out solutions. Second, the Japanese government must accept and subscribe to the fact that U.S. bases and troops must remain indefinitely. Third, while the Special Action Committee on Okinawa produced acceptable short-term results and generated credibility for subsequent measures, its one-year term was not nearly long enough to provide real solutions; the process of resolution must be extended considerably. Fourth, Japan's central government will have to work out its presently ambivalent relationship with Okinawa, which only came under Japanese rule in 1879. Finally, there are no cheap solutions: the bill will include prodigious effort, time, and, most significantly, capital—the majority of which must come from the Japanese.

Integration of the Bases

It is possible to sketch a new, unconventional approach to what Japan and the United States might undertake to advance their shared goals. In the long run, American bases can no longer remain the exclusive enclaves they have been. They must be made more generally relevant to the mainland Japanese, the Okinawans, and the government of Japan. These bases have to be seen locally less as the problem and more as the solution, with respect, for example, to development plans and economic expansion. As a general prescription for future base relations, this suggestion is not commonplace, but neither is it radical. There are examples of effective combined civil-military use of bases in both the United States and in Japan; Hickam Air Force Base in Hawaii and Misawa Air Base in northern Japan are among them. Actually, Misawa is a tri-use base, shared by the Japanese Air Self-Defense Force (JASDF), the U.S. Navy and Air Force, and Japanese domestic airlines.

The concept of shared access is most applicable to airfields and port facilities, where runways and pier space can be shared. It is especially plausible in cases where large facilities, such as Naha Military Port, must be maintained for surge operations during periods of crisis or war but are under-utilized the rest of the time. During normal operations in peacetime, their basic facilities should be made available for commercial operations. Civilian access would have to be structured carefully so that military planners and commanders could depend upon unfettered use of the facilities during intensified military operations. Nevertheless, there is no reason why Kadena Air Base, for instance, could not host a considerable number of civilian flights, or why Futenma could not become a regional air cargo hub while remaining a Marine Corps air station. As a port facility (though not as an industrial park), Naha Military Port can be the focus for greatly expanded maritime traffic in and out of Okinawa. That concept is both a complement and a viable alternative to other Okinawan development schemes. It might be pursued before much more time and effort are invested in relocating the U.S. port facility at Naha to the new artificial harbor at Urasoe.

American bases in Japan also have become too exclusive in the strictly military sense. Interoperability between the U.S. military and the Japan Self-Defense Forces is often touted, but it is seldom practiced. U.S. forces and the JSDF rarely operate next to one another, let alone together. In the past, when Japan was relearning how to organize and operate its military after World War II, Self-Defense Force training in the United States was far more common, and the practice of assigning counterparts for American officers was widespread. The present segregation precludes the Self-Defense Forces and U.S. forces getting to know one another, either professionally or socially. The Marines, for whom there is no direct counterpart in the Self-Defense Forces, are especially isolated. Without purposeful integration, the Ground Self-Defense Force is more likely to identify with the U.S. Army instead.

A policy of sharing facilities has advantages for both countries. A significant JSDF permanent presence on U.S. installations would give Japan's uniformed military services, and the JDA and the Ministry of Foreign Affairs as well, a sense of ownership of U.S. facilities that they otherwise see as expendable both politically and operationally. The United States should expect in return routine reciprocal privileges for U.S. forces on JSDF bases. This would enable much more effective planning for surge operations during periods of crisis or conflict. It is easy to imagine the potential for increased bilateral doctrinal coordination, training opportunities, and commonality of maintenance, repair, and supply.

Crisis and wartime roles for bases will have to be explained more fully to the public, to the prefectural government, and to the government of Japan. Currently, for example, Okinawan assertions about the reduced utility of Futenma and

Naha Port go unchallenged. Without a more effective public argument for the crucial role these and other similar facilities play during crisis and war, nothing will mitigate the growing consensus that they are expendable. It should be possible to make the public case without compromising war plans or other critical information.

U.S. facilities that can revert to JSDF custody should be handed over without delay. This applies particularly to Okinawa's training areas. If the Japanese government is prepared to guarantee the preservation of these tracts and satisfactory access for training purposes to U.S. forces, there is no reason why they cannot be removed from the U.S. books, in addition to the significant acreage already returned in the SACO process.

Consolidation and reversion plans that make sense and are already recognized as acceptable need to be accelerated. The U.S. communications facility at Hansa is a good example of how delays in Japanese funding can hold up the relocation and reversion of U.S. facilities. Funding for the relocation of Hansa's antennas would quickly solve the issue of Yomitan Auxiliary Airfield, which otherwise cannot be released for development because of the potential for electromagnetic interference with U.S. military communications.

Marine artillery training could be relocated to Korea, as well as elsewhere in Japan. Korea is where the Marines are most likely to fight, and the Seoul government can help to relieve pressure on Okinawa. Doing so would also remind the Japanese government that although Japan's security relationship with the United States is an exclusive one, there are other allies in the region who are prepared to cooperate. Equally, air traffic control restrictions that impede the flow of civilian flights are a point of contention, but they can be revised. Peacetime military aircraft operating and training areas and airfield operating procedures could accommodate civilian aircraft much more readily than at present. If JASDF restrictions at Naha Airport cause delays for civilian airliners there, then JASDF operations must be made more flexible.

As for U.S. Air Force assets, some units at Kadena Air Base, such as reconnaissance aircraft, might be relocated fairly easily to other U.S. air bases in Japan; not all of these units are an integral part of the operations of the 18th Wing. Also, the Special Forces battalion at Torii Station can be relocated to a Marine Corps base, or even elsewhere in Japan. It is very important, however, that the "First of the First"—1st Battalion, 1st Special Forces Group— remain in-theater, forward deployed and co-located with the C-130s of the U.S. Air Force 353rd Special Operations Group. As a package, both could be relocated to southern Honshu, in order to consolidate C-130 support at Iwakuni Air Base, where other Okinawa-based C-130s are being moved from Futenma.

Some observers, Japanese and American, insist that the fewer Marines on Okinawa the better. Modernization and technological advances may promote the trend toward fewer troops in any given unit, but fewer Americans does not necessarily equate to a better environment. Presently, many Marine units and individual Marines rotate to Okinawa only for short tours, generally for six months to a year. A better solution might be to make a larger fraction of Marine unit assignments to Okinawa permanent. Individual Marines would come to Okinawa for longer tours, two or three years, rotating as replacements to units continuously assigned to the island. Their families would accompany them.

Of course, this would mean a net increase in the total number of American "military" personnel—for this purpose, dependents count as Marines. More family housing would be required, but the quality of life would improve for Americans and Okinawans alike. The political and financial costs to Washington and Tokyo, including more realistic local housing and cost-of-living allowances for U.S. service members, would be more than offset by the benefits of stability, the influence of family socialization, improvement in troop morale and behavior, and by the benefits to community relations. The Marine Corps could keep the same number of Marines forward deployed, with less disruption to the rest of the force structure. Local military command and management continuity in Okinawa would be improved, and previously rotating units would become available for other essential missions, such as crisis response and Standing Joint Task Force duties.

Whatever the eventual number of U.S. forces on Okinawa, there must be a better screening process for U.S. servicemembers assigned there. The standard overseas screening regimen is not sufficient to reduce the likelihood of off-duty misconduct. There is precedent for this in the way troops were processed for duty in Berlin during the Cold War. The rigorous "Berlin screen" recognized the unacceptable consequences of infractions there, and distinguished between troops eligible for duty in Germany in general and those who could serve in Berlin.

Command attention is essential in this regard, and the Commandant of the Marine Corps has decided to increase the seniority of the III MEF commander to lieutenant general (three-star) rank. This is an effective practical step (and taken for a variety of reasons unrelated to this article), but it should be complemented by detailing a Marine general officer to concentrate exclusively on community relations. This might facilitate imaginative solutions to difficult problems and thereby defuse long-standing animosities. This officer should start by implementing the very benign recommendations of the Shimada Commission chartered by Prime Minister Hashimoto, such as the replanting by U.S. forces of areas denuded by artillery fire. Another Shimada Commission proposal

would be to permit students on their way to school to transit base facilities. Even the Soviets in Berlin allowed Americans such privileges.

Shimada Commission Recommendations

- Soldiers plant saplings in barren training areas
- Enhance community relations
- Traffic passage through American bases
- Examination of the possibility of returning some restricted coastal waters
- Use of on-base fresh-water sources by local communities

There is pressure on U.S. bases throughout Japan, not just on Okinawa. Ideological pressure may not be as significant a factor to the north, but encroachment, noise, and a diminished public sense of military requirements are problems everywhere. While local economic development is not generally an issue elsewhere in Japan, integration of U.S. bases with the JSDF and with local economies would give Japan a verifiable stake in their longevity and preserve them for the long term. On the Kanto Plain, for example, Yokota Air Base could be developed as a major civil air cargo hub for Tokyo while preserving its basic logistical functions and vital surge capacity for the U.S. Air Force. Civil access to Atsugi Air Base could help relieve some of the severe pressure directed at that combined JSDF/U.S. forces base.

Mayor Richard Gordon of Olongapo City in the Philippines is proving what can be done to develop military facilities after the United States departs. However, in retrospect, there was no reason that Subic Bay economic development could not have taken place with the United States as a full partner. American bases in Subic Bay could have been part of the solution, rather than the problem, for local industrial development. Mayor Gordon always was a strong supporter of the U.S. military presence in Subic Bay. Most likely he would have preferred to carry out his plans with the U.S. military, rather than after the bases closed. Innovative solutions might have made the difference in the Philippine Senate's final vote on the U.S. bases. We need to learn from our departure from the Philippines, so that what happened there does not occur in Japan.

Neither the United States nor Japan can afford to overlook any solution that will strengthen the U.S.-Japan security relationship. Base issues are matters that will never be perfectly resolved, but unconventional approaches can overcome ideological barriers and remove practical obstacles. Healthy and productive base relations are an especially important factor in the moral and psychological environment necessary for the continued effectiveness of the bilateral security

relationship. We must make the attempt to preserve the stabilizing U.S. presence that is vital to both nations' international interests.

Notes

1. Japan's annual host nation support contributions to the United States currently amount to more than $5 billion, including the approximately $1 billion yearly average for the Facilities Improvement Program. This accounts for approximately 70 percent of the non-salary costs for U.S. forces in Japan.

2. "The use of facilities and areas by the United States armed forces under the Unified Command of the United Nations established pursuant to the Security Council Resolution of July 7, 1950, and their status in Japan are governed by arrangements made pursuant to the Treaty of Mutual Cooperation and Security." Security Treaty Exchange of Notes, 19 January 1960.

3. Exchange of notes between Nobusuke Kishi, Prime Minister of Japan, and Christian A. Herter, Secretary of State of the United States of America, 19 January 1960.

4. U.S. Forces Japan Command Briefing, 22 February 1996.

5. For a discussion of these South China Sea issues, see Henry J. Kenny, "The South China Sea: A Dangerous Ground," Naval War College Review, Summer 1996, esp. pp. 97–100.

Ψ

Soccer Fields and Submarines in Cuba
The Politics of Problem Definition

Patrick J. Haney

H.R. HALDEMAN RECALLS THE DAY in September 1970 that Henry Kissinger charged into his office with a thick file under his arm. He slammed the file down on Haldeman's desk and said, "Bob, look at this." It was a series of eight-by-ten-inch air reconnaissance photos. "Well? Well?" he demanded.

"Well, what?" Haldeman asked in return.

Kissinger explained that the pictures were of Cienfuegos, on the southern shore of Cuba. "It's a Cuban seaport, Haldeman, and these pictures show the Cubans are building soccer fields," Kissinger said. "I have to see the president right now. Who's in there with him?" Haldeman told Kissinger that John Ehrlichman was meeting with the president but that he could go right in if it was urgent. But, Haldeman asked, for what reason? Was Kissinger going to burst into the Oval Office in the middle of an economic conference and shout, "The Cubans are building *soccer fields*?" Had he consumed too much "bubbly" the night before?

Haldeman writes, "Kissinger stuffed the pictures back in the file and said, as patiently as he could, 'Those soccer fields could mean war, Bob.'" Haldeman asked how the soccer fields could mean war; Kissinger replied, "Cubans play *baseball. Russians* play soccer."[1]

While Kissinger's observation that Cubans did not play soccer in 1970 was incorrect, the inference that the Soviets were building some kind of naval facility at Cienfuegos, at least opening the possibility of another Cuban crisis, was on the mark.[2] Yet this incident never grew into a full-blown episode in U.S. foreign policy, and no U.S. force was used. There are no great books about this incident, and there have previously been only a few scholarly articles about it.[3] Discussion of the incident usually shares space in the memoirs and biographies of participants with other matters of U.S. foreign policy during September and October 1970. The Cuban submarine base incident had all the markings of a major crisis, but it never blossomed into one.

This article examines that 1970 case with a particular eye toward the politics of problem definition, in an effort to understand how events come to be defined as crises, or non-crises, and to appreciate the prerogative that decision makers enjoy in this area. It will be argued that crises are more than just shocks to a policy-making system, easily identified as "crises." Rather, as the Cuban incident highlights, crises are situations that are interpreted as part of a subjective, psychological, and political process, and are then represented by decision makers in certain ways. Situations require definition by policy makers, and the process of defining situations for which policy is to be made is something students of foreign policy need to understand better. The extent to which crises are socially and politically constructed and represented has been underappreciated by scholars in the field; this article tries to address these issues, in an introductory way.

Studying Crises

In common use, the term "crisis" usually implies an important situation, a violent or potentially violent one, a turning point.[4] In an effort to build systematic theory about foreign policy behavior, scholars have attempted to define more precisely what constitutes a crisis. Definitions generally emerge from one of two approaches to the study of international politics—systemic and decision-making. In the systemic approach, a crisis "is a situation which disrupts the system or some part of the system."[5] Here, crises are related to such terms as change and conflict. There is an implicit assumption that attention should principally concentrate on actions and events as objective realities.

Decision-making approaches have largely focused on crisis as a situational variable, not unlike a stimulus-response model: "crisis acts as a stimulus; the decision represents the response."[6] This emphasis has led to one of the most common ways in which crises are defined in decision-making research in political science: as situations characterized by levels of *threat, time* to respond, and *surprise.* Crises threaten national goals, restrict the amount of time available

for a decision to be reached, and surprise decision makers by their occurrence.[7] A related decision-making approach defines crisis as a situation "caused by a change in the international or domestic environment that generates a perception in the minds of policymakers of a threat to important goals or values, with significantly increased probability of hostilities, and a short time for response."[8]

The above should indicate that there is little consensus in the field about the exact definition of a crisis.[9] Still, as one leading scholar has noted, there is "general agreement that crises are marked by severe threat to important values and that time for coping with the threat is finite."[10] The evidence of the behavioral consequences of surprise has not been strong enough to merit the inclusion of surprise as a necessary element of a crisis, and the stipulation that crises must involve perception of a significant probability of armed conflict may be too restrictive. Finally, while many agree that a crisis is likely to involve stress for participants, no commonly agreed-upon measure of this stress is available to researchers.[11]

With one definition or another, scholars of international relations and American foreign policy have largely taken it as given that crises are clear, predefined, identifiable shocks that are recognized by all when they occur. But the empirical phenomena we study indicate that crises are not always, or necessarily, like that. For example, at some point President George Bush *decided* that the situation in the Persian Gulf in 1989–1990 was a "crisis" for U.S. foreign policy. In 1996, members of the Clinton administration concluded that actions of Saddam Hussein's military in northern Iraq *warranted* a "crisis response," and Tomahawk missiles were launched. In 1970, although the situation along the South Vietnamese border with Cambodia had been relatively constant, a "crisis" was *depicted* by President Richard Nixon to justify military operations by U.S. forces in Cambodia. Again, confusing events in the Gulf of Tonkin in 1964 sufficed for President Lyndon Johnson to commit U.S. forces more deeply into the Vietnam War, whereas a much less ambiguous casus belli four years later—the seizure of the USS *Pueblo*—drew almost no response from the same president.[12]

The effort to systematize crisis situations and the study thereof is an important one that should be appreciated. However, basic questions are left insufficiently explored by both of the traditional approaches. To do better, we need to go beyond the notion that crises are "events" that happen in the international relations systems, and even the recognition that crises exist in the perceptions of decision makers. We must also study the ways in which leaders define situations as crises, non-crises, or as something in between. How does a crisis come to be conceived as such within the decision-making system? Why does one stream of events come to be a crisis, while a similar one does not? We must

begin to address questions at this level; they are essential questions for both the theory and practice of foreign policy.

Some theorizing begins with the "decision," making it the unit of analysis, and then focuses on how decision makers define the situations they face. As has been noted in previous research, information is "selectively perceived" according to decision makers' "frame of reference."[13] Reinforcing this point, two recent scholars have argued that "much (perhaps all?) of politics is constituted in language. Language becomes the medium within which politics is constituted, modified, and played out. Representations, which themselves are linguistic, do not point to the objects that they represent, but rather are themselves components in webs of socially constituted rights, rules, responsibilities, and other such conventions."[14] They argue that "politics involves the selective privileging of representations."[15] This perspective has not been much applied to studies of foreign policy and foreign policy crises, but it should be; it draws our attention to the politics of problem representation and definition as an essential component of a crisis or non-crisis situation.

One decision to which such a perspective has been applied is the construction of the 1962 Cuban Missile Crisis. Why, that researcher asked (as is rarely asked), did U.S. decision makers see the missiles as an intolerable threat to peace that the United States had an obligation to remove? Why was there a crisis over the missiles in Cuba at all?[16] That scholar's view is that "national interests are socially constructed: they are defined and redefined in particular historical instances through a more or less overt process of ideological construction."[17] This process of social construction provides decision makers with "the categories through which sense impressions are classified, and hence comprehended, as particular 'objects,' 'actions,' 'events,' and 'situations.'"[18]

Another perspective suggests that what is needed now is for analysts to move beyond the "why" questions that we have traditionally pursued in our research to the "how-possible" questions. We might examine "how meanings are produced and attached to various social subjects/objects, thus constituting particular interpretive dispositions which create certain possibilities and preclude others."[19] We thus focus attention on how policymakers create and construct realities.[20]

When we pull these different views of problem definition together, it is possible to see four levels of crisis or non-crisis construction: social or cultural construction, where shared symbols are used to create meaning; linguistic construction, where language is a set of signs that build meaning; cognitive construction, where individuals build meaning in their perceptions of reality; and political or strategic construction, where individuals and groups compete to create their preferred interpretation of reality as opposed to those of others.[21] In this article, strategic construction will receive the most attention, though

some will be paid to the process of cognitive construction, especially for President Nixon and Henry Kissinger. Problem construction and definition at these levels involves examining how and why an issue is moved to a position where a decision-making group prepares or readies a response to an issue, and exploring what happens then and why. This emphasis is not dissimilar to the analysis pursued in the "bureaucratic politics" paradigm, with its stress on politics and bargaining in an organizational and psychological environment.

We shall explore the politics of problem definition by examining the case of the Soviet submarine base discovered in 1970 to be under construction in Cuba. The evidence is drawn from secondary sources, biographies, and memoirs, as well as scholarly and newspaper articles. The purpose is to take a "first cut" at explaining how and why this case was politically constructed and defined as a non-crisis. The discussion begins with an outline of what transpired in the episode, then applies a more analytic perspective to the politics of the episode, with special attention to Nixon and Kissinger.

The Non-Crisis at Cienfuegos

The events that would come to be focused on Cienfuegos built up over considerable time. Between 20 and 27 July 1969 a Soviet naval deployment group including two Foxtrot-class diesel-powered attack submarines, a submarine tender, a guided missile cruiser, two guided missile destroyers, and a naval oiler visited Havana. (A November-class nuclear-powered attack submarine had accompanied this force but did not enter any Cuban port.) In May 1970, two Foxtrot submarines, a guided missile cruiser and destroyer, a submarine tender, and a nuclear-powered Echo II–class submarine carrying cruise missiles visited cities in Cuba, including Cienfuegos. This time the nuclear-powered vessel did put into port. Also, three pairs of Tu-95 Bear strategic bombers operated from Cuba while the ships were present.[22]

There was movement on the diplomatic front as well. On 4 August 1970, the Soviet chargé d'affaires in the United States, Yuli Vorontsov, asked (in Ambassador Anatoli Dobrynin's absence) for a reaffirmation of the Kennedy-Khrushchev "understanding" that had followed the 1962 Cuban Missile Crisis. By that implicit agreement, the United States had assured the Soviet Union that it would not invade Cuba; the Soviets for their part had agreed to remove their missiles from Cuba and promised not to place any offensive weapon or related delivery system on its territory.[23] The reason for the new request was not well understood in Washington, but it would take on more meaning as a part of the politics of September 1970, which was to be a busy month for the Nixon administration.[24] Salvador Allende won a slim plurality in a three-way race for the presidency of Chile on 4 September—at which point the administration began to consider

ways to prevent Allende from taking office. The Middle East peace process was dragging on, and on this subject the relationship between the secretary of state, William P. Rogers, and the national security adviser, Henry Kissinger (whom Nixon had pulled out of the negotiations), was as rife with conflict as were relationships between the states of the region. Also, Jordan faced civil war against internal Palestinian forces opposed to King Hussein and aided by tanks from Syria. As for the war in Vietnam, Kissinger's secret talks in Paris resumed on 7 September. By mid-September Nixon's popularity rating had fallen below 50 percent for the first time since he had taken office. Of such times Kissinger would joke, "We can't have a crisis this week, my schedule is full."[25] It was in the midst of all this that intelligence data, especially from a series of flights by U-2 photographic reconnaissance aircraft, indicated that the Soviets were building on an island in the port of Cienfuegos a submarine base capable of servicing nuclear submarines.

First, on 9 September 1970 a Soviet flotilla was reported to have arrived at Cienfuegos. It included a submarine tender, a guided missile cruiser, a guided missile destroyer, an oceangoing tug, and an *Alligator*-class LST (landing ship, tank) that carried two special-purpose barges apparently designed to service nuclear submarines.[26] According to notes made at the time by the Chief of Naval Operations, Admiral Elmo Zumwalt, there were seven Soviet ships, military and auxiliary, in Cienfuegos on 9 September.[27] U-2 flights were ordered to monitor activity in Cuba. On 16 September aerial photography showed construction in the harbor at Cienfuegos.[28] "A submarine tender was anchored to four buoys in the deep-water basin, and submarine nets were strung across the harbor. A large complex of barracks, administrative buildings, and recreation facilities was almost completed on Alcatraz Island."[29]

On Friday, 18 September, a meeting of the Washington Special Actions Group (WSAG), the body charged with crisis management in the Nixon White House, was held concerning the situation in Jordan.[30] After the meeting the director of the Central Intelligence Agency, Richard Helms, stayed behind to talk to Kissinger about the "fairly large facility" at Cienfuegos. Among other things, Helms reported to Kissinger, it included a soccer field. A CIA analyst noted that Cubans played little soccer, so it probably was there "to provide recreation for Soviet seamen."[31] Kissinger then went to see H.R. Haldeman in order to inform the president (the meeting that produced the exchange with which this article began). Kissinger told Nixon that the presence of a Soviet submarine tender (capable of servicing the new Yankee-class ballistic missile submarine that had recently begun patrolling the North Atlantic), in combination with the other construction underway at Cienfuegos, was "ominous"; it would greatly increase the strategic capability of the Soviet Union against the United States.[32] Over the next few days, additional U-2 reconnaissance showed

the initial assessments to be accurate—a submarine base was indeed under construction at Cienfuegos.

Nixon and his main advisers had different opinions about how to proceed. Nixon did not want a new Cuban crisis, certainly not at that moment.[33] Secretary Rogers also wished to avoid "high-level tension."[34] Contrariwise, the Joint Chiefs of Staff recommended that the base be removed, and Kissinger believed that the development could not be ignored. He was informed at a CIA briefing that the "support facility" would increase by 33 percent the amount of time Soviet submarines could be within range of the United States. He put Cuba on the WSAG agenda and scheduled a National Security Council meeting with Nixon.[35]

The administration was trying to keep the matter quiet, but columnist C.L. Sulzberger broke the story in the *New York Times* on 25 September.[36] Nevertheless, Nixon did not himself comment in public but ordered Kissinger to give a background briefing to the press.[37] Kissinger told reporters that the government was watching developments in Cuba closely and that the United States would "view the establishment of a strategic base in the Caribbean with the utmost seriousness."[38] He made the point that all "offensive weapons" must be removed and remain out of Cuba. Kissinger met with Ambassador Dobrynin later in the day and told him that his words had been carefully chosen to provide the Soviets a graceful way out. "Moscow should be under no illusion," Kissinger later recalled saying; "We would view continued construction with the 'utmost gravity'; the base could not remain."[39] The Soviets responded on 5 October, after Nixon and Kissinger had returned to Washington from a trip to Europe. They affirmed the 1962 understanding and made a commitment that no base would be built in Cuba that would be large enough to service Yankee-class boats and thereby violate the understanding.[40]

There were a few further incidents involving Soviet naval activity in Cuba, as definitions of "base" were worked out, but for the most part this episode ended here. Nixon writes in his memoirs, "The crisis was over. After some face-saving delays, the Soviets abandoned Cienfuegos."[41] Nixon further argues that "through strong but quiet diplomacy we had averted what would have been known as the Cuban Nuclear Submarine Crisis of 1970 and which, like its predecessor, might have taken us to the brink of nuclear confrontation with the Soviet Union."[42] Others certainly agree that Nixon had avoided a crisis.[43]

As one student of the events around Cienfuegos has noted, this incident had intrinsic significance—the Soviet submarine base and its measurable strategic advantages for the Soviets—and also symbolic significance as an implicit rejection by the Soviets of American-imposed limits on their freedom of action.[44] Beyond this, I argue that this case has significance for students and

practitioners of U.S. foreign policy who are interested in the nature and politics of foreign policy crises and non-crises. This case illustrates the latitude afforded decision makers to define situations as crises or not, and how situations exist not "objectively" but only to the extent that decision makers so perceive them. Kissinger remembers that Secretary Rogers "wanted any paperwork [on the episode] restricted to a minimum so that we did not 'create a crisis in the public mind.' The key issue, of course, was not whether there was a crisis in the public mind but whether there existed a crisis objectively, whether we could accept a permanent Soviet naval base in Cuba."[45] Kissinger here frames the matter as intrinsically a crisis. Why and how did Nixon, Kissinger, others in the administration, and the Joint Chiefs form different views about the nature of the problem at Cienfuegos and then come to different conclusions about how to proceed? How do we explain and understand the process by which this situation came (at least at the outset) to be defined, and therefore dealt with, as less of a "crisis" than Kissinger believed "objective circumstances" dictated?

Explaining this incident may be aided by a constructivist framework, that is, by exploring the politics of problem representation. Let us review how Nixon's and Kissinger's representations of the problem at Cienfuegos came to be formed, and how careful strategic moves by the national security adviser caused Nixon's view, which initially predominated, ultimately to move closer to his own.

The Politics of Problem Definition with Cienfuegos

In order for a situation to come to be defined as a crisis by policy makers, it must first come to their attention out of the flow of potential problems that might merit concern. A problem must then be moved to where responses are prepared. The processes of placing an issue on the policy-making agenda and of constructing an interpretation of it are inherently political. Attention to the cognitive and strategic levels of problem construction or definition and recognition of its place in the standard bureaucratic politics paradigm may help us understand and explain U.S. policy in this case, as well as others.[46]

There are important cognitive and strategic levels of problem definition in this case. President Nixon, as noted, did not want to have a crisis in Cuba on his hands in September 1970. "A new Cuban missile crisis, especially at that moment ... would force the cancellation of his eagerly anticipated trip to Europe and distract from the crisis in Jordan."[47] He also believed the previous crisis in Cuba had been ill handled by President John Kennedy, who had pushed Khrushchev into a nearly impossible position with respect to international prestige. He wished to take a different path, to see the issue at Cienfuegos within the context of what he would later call "hard-headed detente."[48] "In view of what had happened in the 1962 crisis, I decided that I would not force a

public confrontation unless I had no other choice, and I would not deal with the Soviets from anything less than a position of unyielding strength."[49] H.R. Haldeman recalls that Nixon rejected the option to "go public" and confront the Soviets with a crisis of war or peace. "Nixon was determined to go the other way, toward peace with the Soviets. He was interested in the long-term solid structure of peace, not just a quick and flashy triumph."[50]

Nixon believed that while the United States and the Soviet Union were locked in competition, they shared common interests that made it mutually advantageous to compromise. "Our common interest was to ensure that our differences did not lead us into a shooting war."[51] Reflecting upon detente and the Cienfuegos episode in his 1971 report to Congress on the state of U.S. foreign policy, Nixon argued that "the nature of nuclear power requires that both the Soviet Union and we be willing to practice self-restraint in the pursuit of national interest.... Confrontation may arise from a mistaken perception of a posture of an adversary. Such a mistake can lead to a failure to appreciate the risks and consequences of probing for advantages or testing the limits of toleration. We believe that this was involved to some degree in the events which led up to the Middle East crisis last year. It may have been a factor in Soviet naval actions in the Caribbean in the fall of 1970. There the Soviet Union took new steps which would have afforded it the ability to again operate offensive weapons systems from this Hemisphere. That would have been contrary to the understanding between us. Only after a period of discussion did we reaffirm our understanding and amplify it."[52] For Nixon, "the crises in the Middle East and the Caribbean had underlined once again the dangers of unmitigated competition between us."[53] He believed the Soviets had set back detente with their "adventurism in Cuba."[54]

With this cognitive construct, Nixon defined the problem in Cienfuegos as important but not a "crisis," a matter to be dealt with not publicly or though brinkmanship but through quiet diplomacy. On 19 September, Nixon urged Kissinger to play down the problem; "He did not want some clown senator demanding a blockade."[55] Nixon wrote in his memoirs, "The success of the policy of keeping the crisis low key depended on keeping a tight lid on the story. I knew from the 1962 experience that a serious war scare would sweep the country if the real story of Cienfuegos hit the headlines."[56]

This point suggests a link between the cognitive and strategic levels of problem definition for the president. Nixon had defined the problem for himself, and a policy of quiet, non-urgent diplomacy followed from that definition. The politics began when Nixon engaged others to ensure that his policy preference, if not his problem definition, was adopted. Crucial to his goal was silence. Nixon understood that the situation at Cienfuegos could be construed differently than he did, with different implications for policy response. Nixon sought to limit

this possibility by restricting who would know about the situation in the first place. He ordered his staff not to brief the press, and in particular he tried to keep Henry Kissinger busy, since he knew his adviser disagreed with him.

Nixon responded to Kissinger's presentation of the activities in Cuba with a note: "I want a report on a crash basis on: (1) What CIA can do to support *any* kind of action which will irritate Castro; (2) What actions can we take which have not yet been taken to boycott nations dealing with Castro; (3) Most important, what actions can we take, covert or overt, to put missiles in Turkey—or a sub base in the Black Sea—anything which will give us some trading stock."[57] Kissinger saw these as delaying tactics, or, as he calls them in his memoirs, time-wasting options.[58] He preferred and sought a different course.

The events of September 1970—Chile, Cuba, Jordan, Vietnam—were, according to one of Kissinger's biographers, related in his mind to "a pattern of Soviet conduct designed to test the resolve of the United States."[59] "Kissinger felt deceived" by failed Soviet reassurances about the Middle East and therefore thought it all the more important that the U.S. show resolve in Cuba.[60] According to his memoirs, on 1 June 1970, after the second visit of the Soviet navy to Cuba in May, he sent a message to Nixon indicating "it will be important to keep our eye on this situation."[61] Later that June, Kissinger recalls, the NSC staff expert on Latin American affairs, Viron P. Vaky, called his attention to a CIA study that suggested the Soviets might intend to build a new installation in Cuba for either surface ships or reconnaissance aircraft.[62]

On 16 September, Kissinger had breakfast at the White House with C.L. Sulzberger of the *New York Times*. He told Sulzberger, among other things, about "Soviet horsing around in Cuba." One scholar concludes that this was partly a calculated leak designed to pressure Moscow, and partly a product of Kissinger's compulsion to talk. We might also consider it as to some extent intended to pressure the U.S. policy-making system to see the issue from Kissinger's perspective. It was on this basis that Sulzberger published his 25 September column about the issue.[63]

Ray Cline, a former CIA official and then director of the State Department's Bureau of Intelligence and Research, on or about 17 September provided a cautious assessment of the Cienfuegos situation. He told Under Secretary of State U. Alexis Johnson, who would later brief the House Subcommittee on Inter-American Affairs, "Look, I don't think this is a crisis but you ought to at least be aware that something new and unusual is going on in Cienfuegos."[64] Johnson took Cline's report to Kissinger, and it was then that the real action began. On 18 September, Kissinger had his encounters with Helms, Haldeman, and the president.

Sometime later, Kissinger gave a briefing to the senior White House staff. "John Ehrlichman [a Nixon aide] recalls that Kissinger's introduction was 'laden with crisis.' . . . All in all, Ehrlichman remembers it as a somber briefing."[65] Kissinger defined the Soviet activity at Cienfuegos as part of a pattern of Soviet testing of U.S. resolve, a major threat to U.S. interests that had to be met directly and promptly—"those soccer fields may mean war." His definition was supported by others. Kissinger was briefed by the CIA that afternoon that the Soviets "were establishing a support facility [in Cienfuegos] for naval operations in the Caribbean and the Atlantic." The result would be a "quantum leap in the strategic capability of the Soviet Union against the United States."[66] Kissinger records in his memoirs that the Nixon administration faced the "nightmare of policymakers: simultaneous crises in widely separated parts of the globe."[67]

The Joint Chiefs of Staff recommended removing the Cienfuegos base by whatever means necessary.[68] Admiral Zumwalt recalls that he was struck by the combination of Soviet ships in Cienfuegos and the construction underway at the port. "I was concerned by this and I expressed my concern to Admiral [Thomas H.] Moorer [Chairman of the Joint Chiefs] and Secretary [of Defense Melvin] Laird, submitting on 17 September a memorandum urging this apparent Soviet effort to establish a base not be accepted."[69] He believed the Soviets were testing U.S. firmness at Cienfuegos and that a passive response would "tempt the Soviets to intransigence in other situations."[70] He also was concerned that the base, if completed, would pose a severe threat to the United States by increasing "by half the number of submarine missiles within firing range of the U.S."[71]

Alexander Haig, then Kissinger's deputy at the NSC, characterized the Soviet construction at Cienfuegos as "reckless." He believed "the base at Cienfuegos was a far more serious threat than the missile bases that had precipitated the Cuban Missile Crisis." Haig saw the construction as a "flagrant violation" of the understanding that had ended the 1962 crisis.[72]

"The need to show military resolve," Kissinger felt, "was critical."[73] Kissinger found himself taking a more hawkish position than either the president or the secretary of state; indeed, it was at this point, on 18 September, that Rogers urged him by telephone to avoid "high level tension."[74] He knew, therefore, that he would have to act carefully if he was to construct the situation differently. He began by scheduling discussions of the Washington Special Actions Group on the matter; Cuba became a last-minute addition to the WSAG agenda for 19 September. No staff work had been completed on the issue, and "opinions gyrated randomly in a conversational style."[75] At the meeting Kissinger argued against a legalistic approach. The 1962 crisis, he asserted, had been a crisis not because the Soviets had done anything illegal but because they had done something contrary to U.S. interests. "The current case was similar," in

Kissinger's view.[76] He writes in his memoirs that the Nixon advisers had difficulty understanding the strategic importance, as he saw it, of the situation in Cienfuegos—that if the United States acquiesced now it would be difficult to resist further Soviet expansion later.[77]

While all at the WSAG meeting agreed on the facts, reactions to the facts varied. The president and the secretary of state "wished to avoid a crisis atmosphere" until the administration's response was determined.[78] Kissinger directed WSAG representatives from each agency to submit assessments and recommendations by 21 September. The State Department was to solicit the views of Soviet expert Ambassador Llewellyn Thompson, who responded "that the Soviet move was largely symbolic; it was a symptom of their inferiority complex."[79] The State Department itself proposed a quiet negotiation between Secretary Rogers and Foreign Minister Andrei Gromyko. The Defense Department and the Joint Chiefs argued that the base had to be removed and suggested that U.S. reserve forces be called up. Rogers took the adamant position that the United States should do nothing about the base in the short run and that the issue should be kept secret.[80]

Kissinger called a new meeting of the WSAG on 24 September to implement the president's wishes, with which he disagreed.[81] Kissinger wished to act quickly, but Nixon was in no hurry. Kissinger recalls that he "saw the Soviet move as going beyond its military implications; it was part of a process of testing under way in different parts of the world. . . . I strongly favored facing the challenge immediately lest the Soviets misunderstand our permissiveness and escalate their involvement to a point where only a major crisis could remove the base. I opposed time-wasting moves such as waiting for a Gromyko-Rogers conversation in a month's time. The Soviets knew we were photographing Cienfuegos almost daily; if we did nothing they had to assume that we were acquiescing."[82]

One biographer of Kissinger believes that "faced with a President who would not take the tough road, Kissinger treated him like any other bureaucratic enemy, and leaked to the press."[83] I would argue further that Kissinger pursued two tracks on the strategic level of problem definition: he leaked information to the outside, and he withheld information from the inside. Kissinger notes that it was difficult to persuade the president of his point of view on the matter, and that indeed he never really did. He writes that Nixon accepted his analysis but wished to wait until after the November off-year congressional elections to confront the Soviets and so accepted Rogers' recommendations in the meantime.[84] Ultimately, Kissinger writes, Nixon took the more hawkish approach because of an "accidental" briefing by the Department of Defense that explained more about Cienfuegos than had been intended.[85] Kissinger had

sent instructions to the Defense Department about what to say should the Cuba issue come up in a briefing (since he had already planted the story with Sulzberger). When the question did arise, however, the DoD briefer mistakenly told reporters all he knew on the issue, and the next morning the story hit the headlines.[86]

With the 25 September Sulzberger article, Kissinger achieved his interim goal of constructing at least a mild sense of urgency in Congress and the public; for Nixon to do nothing was now politically unfeasible at home. Articles began running in the newspapers almost daily. While Senator William Fulbright urged a diplomatic resolution to the problem, Congressman Dante Fascell, chairman of the House Subcommittee on Inter-American Affairs, argued for a quick U.S. response and called for hearings on the issue. L. Mendel Rivers, chairman of the House Armed Services Committee, agreed: "We cannot live with this new Soviet threat at our doorstep."[87] Kissinger wrote later that he told the president "that we had no choice now except to face the Soviets down. . . . When the options were starkly defined, Nixon was always decisive. He understood immediately that waffling could only increase our dangers."[88] Nixon now approved Kissinger's plan to brief the press "on background" (as an unnamed official) that the administration viewed the situation with "utmost seriousness" and to convey to Ambassador Dobrynin that the United States viewed continued construction at Cienfuegos with "utmost gravity" and that the base could not remain—but that if the ships left Cienfuegos, the United States would consider their activities to have been an exercise.[89] Kissinger's background comment was published 26 September on page 1 of the *New York Times*.[90]

The secretary of state was baffled by Kissinger's warning to Moscow and criticized him for indulging in Cold War rhetoric.[91] Rogers had the same information as Kissinger but drew less apocalyptic conclusions about Soviet intentions. He did not think the base would upset the balance of forces in the Caribbean and did not think the Soviets were looking for trouble. Kissinger later recalled that he and Rogers had quite a "blowup" about the incident.[92]

The *Times* reported on 30 September that there was disagreement inside the Nixon administration about the nature of the problem at Cienfuegos and that Moscow had publicly declared that it was not building a base in Cuba.[93] In Madrid at the time, Kissinger reportedly called the article "an act of treason."[94] On 1 October, the same paper reported that the U.S. response was based on dated and dubious information.[95] Over the next two weeks, as many in the administration declined to sustain Kissinger's alarm, a skeptical public and congressional reaction developed. Nixon himself wanted the situation calmed down and hoped for Soviet assurances that there would be no submarine base at Cienfuegos, presumably so he could move on to other matters. But on 15 October, reporting about the mix of opinions about the nature of the "crisis"

at Cienfuegos, journalist Max Frankel wrote in the *Times* that administration officials might be basing their fears on some classified development. Frankel reported that "the [publicly known] evidence that the Russians might be planning a nuclear-submarine base in Cuba was far from convincing and there are some indications that the Administration's warnings to Moscow on this point came out sounding more ominous than had been intended. But the warning itself was not idly made, officials insist, still implying that some secret developments justified them in fearing the worst."[96] It is not clear whether this was a reference to Kissinger, and if so, whether he had claimed to have, or really did have, secret information that bolstered his problem definition and policy preference. Neither Kissinger nor Nixon make any reference in their memoirs to any additional classified data about Cuba. But it is an interesting, possibly strategic, leak.[97]

The second "track" of Kissinger's efforts to define the situation on a strategic level was to keep a tight hold on information inside the bureaucracy. Indeed, this case has been cited as an example of Kissinger's penchant for doing so.[98] Admiral Zumwalt recalls how it worked. Zumwalt sent a copy of his initial memorandum about Cienfuegos to Rear Admiral Rembrandt Robinson, who (as NSC liaison) represented the Joint Chiefs at the White House. A few days later, Robinson came to see Zumwalt with a draft of a paper Kissinger had asked him to write "that stated unequivocally that the United States would not accept at Cienfuegos or anywhere else in Cuba a base that could be used by Russian ships armed with strategic weapons."[99] Zumwalt asked why the paper was not being routed through the secretary of state, the secretary of defense, and the Joint Chiefs; Robinson replied that Kissinger did not wish to bring Secretary Rogers into delicate foreign policy matters.[100] Also, it may not be coincidental that the initial WSAG meeting about Cienfuegos had available, as noted, no prepared staff work, which left participants ill informed and dependent on whatever information Kissinger chose to tell them. Kissinger ordered tight restrictions on sharing the information within the bureaucracy and was upset to learn of information-sharing across the bureaucracy, such as by Zumwalt and Robinson. By controlling who knew what, Kissinger put himself in a better strategic position inside the bureaucracy to influence the politics of problem definition. Kissinger succeeded in moving U.S. policy toward the view that emerged from his problem definition, and he did it through political maneuvering.

Three Crucial Weeks

The Soviets eventually, of course, provided assurances that they were not building a permanent submarine base at Cienfuegos, and the Soviet Union and

the United States reaffirmed the 1962 understanding that had concluded the Cuban Missile Crisis. It is interesting to note that little changed at Cienfuegos after this. Soviets ships, including nuclear-powered and nuclear weapons–carrying submarines, continued to call at Cienfuegos from time to time, though with much less U.S. public attention. In this sense it could be argued that Nixon's problem definition and policy preference ultimately prevailed—we do not look on Cienfuegos as a crisis, though it probably had all the objective attributes of one. But Kissinger's view, as a result of his strategic political moves, carried the day for three crucial weeks.

There were many forces, institutions, and personalities at work in the making of U.S. policy in the Cienfuegos non-crisis. To understand how and why the nation responded as it did, we need to understand the politics of problem definition in the case. We have focused here primarily on the cognitive and strategic levels of problem definition, and specifically on Richard Nixon and Henry Kissinger, in a first approximation of the process by which the U.S. response was produced.

There is reason to believe that position and interests are themselves the consequences of deeper processes of social construction and the development and competition of ideas.[101] The non-crisis at Cienfuegos provides an example of this, but it is not the only case that suggests the importance of the political process of defining situations. For example, it has been recently argued that in the 1973 October War, Soviet compellence backfired when the United States responded to a threat (of unilateral Soviet intervention to force a ceasefire) by redefining the issue as a test of American resolve.[102] Similarly, during the 1962 crisis Robert McNamara argued to the "ExCom"* that the missiles in Cuba were not a military problem but rather a domestic political one; but not everyone agreed.[103] A recent reevaluation of decision making in the Cuban missile crisis supports the view that the politics of how problems are represented and defined is central to—and precedes—determination of how they are approached.[104]

The case of the submarine base at Cienfuegos offers a useful window into these issues. It presents an episode in which there was disagreement among policy makers about how the situation should be defined, and thus over what the U.S. response should be. The Cienfuegos case, aside from its intrinsic interest, reminds scholars and practitioners alike of the complex nature of foreign policy crises and the inherently political nature of their first step in shaping the problem—deciding whether they have one.

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* Or "Executive Committee," formed by President Kennedy to deal with this specific crisis.

Notes

1. H.R. Haldeman, with Joseph DiMona, *The Ends of Power* (New York: Times Books, 1978), pp. 85–6 (emphasis adjusted). See also Stephen A. Ambrose, *Nixon: The Triumph of a Politician 1962–1972* (New York:

Simon & Schuster, 1989), p. 381; Raymond L. Garthoff, "Handling the Cienfuegos Crisis," *International Security,* Summer 1983, pp. 48–9; and Henry Kissinger, *The White House Years* (Boston: Little, Brown, 1979), p. 638.

2. This assessment by Kissinger was not altogether correct; soccer in fact had a following in Cuba by this time. Garthoff further notes that contrary to Kissinger's claim in his memoirs to have made this (dubious) deduction, CIA analysts had already made the same (incorrect) point. See Garthoff, "Handling Cienfuegos," p. 49, n. 2. See also Ambrose; Seymour M. Hersh, *The Price of Power* (New York: Summit Books, 1983); and Walter Isaacson, *Kissinger* (New York: Simon & Schuster, 1992).

3. Garthoff, "Handling Cienfuegos." See also Leslie K. Fenlon, "The Umpteenth Cuban Confrontation," U.S. Naval Institute *Proceedings,* July 1980, pp. 40–5.

4. James A. Robinson, "Crisis: An Appraisal of Concepts and Theories," in Charles F. Hermann, ed., *International Crises* (New York: Free Press, 1972). See also Herman Kahn, *On Escalation* (New York: Praeger, 1965); and Anthony J. Weiner and Herman Kahn, *Crisis and Arms Control* (Harmon-on-Hudson, N.Y.: Hudson Institute, 1962).

5. Charles F. Hermann, "International Crisis as a Situational Variable," in James N. Rosenau, ed., *International Politics and Foreign Policy,* rev. ed. (New York: Free Press, 1969), pp. 411–2. See also Ole R. Holsti, "Theories of Crisis Decision Making," in Paul G. Lauren, ed., *Diplomacy* (New York: Free Press, 1979).

6. Hermann, "International Crisis," in Rosenau, ed., p. 413.

7. Ibid., p. 414. See also Charles F. Hermann, "Some Issues in the Study of International Crisis," in Hermann, ed., *International Crises.*

8. Richard G. Head, Frisco W. Short, and Robert C. McFarland, *Crisis Resolution: Presidential Decision Making in the Mayaguez and Korean Confrontations* (Boulder, Colo.: Westview Press, 1978), p. 30. See also Michael Brecher, "A Theoretical Approach to International Crisis Behavior," *Jerusalem Journal of International Relations,* vol. 3, nos. 2–3 (1978), pp. 5–24.

9. Michael Haas, "Research on International Crisis: Obsolescence of an Approach?" *International Interactions,* vol. 13 (1986), pp. 23–58.

10. Ole R. Holsti, "Crisis Decision Making," in Philip E. Tetlock, Charles Tilly, Robert Jervis, Jo L. Husbands, and Paul C. Stern, eds., *Behavior, Society, and Nuclear War* (New York: Oxford Univ. Press, 1989), p. 12.

11. Ibid., pp. 12–3.

12. There is an excellent new study available on the events in the Tonkin Gulf in 1964. See Edmund Moise, *Tonkin Gulf and the Escalation of the Vietnam War* (Chapel Hill: Univ. of North Carolina Press, 1996).

13. Richard C. Snyder, H.W. Bruck, and Burton Sapin, eds., *Foreign Policy Decision Making* (New York: Free Press, 1962), pp. 87, 177.

14. Donald A. Sylvan and Stuart J. Thorson, "Ontologies, Problem Representation, and the Cuban Missile Crisis," *Journal of Conflict Resolution,* vol. 36 (1992), p. 716.

15. Ibid., p. 731. See also D. Michael Shafer, *Deadly Paradigms* (Princeton, N.J.: Princeton Univ. Press, 1988).

16. Jutta Weldes, "Constructing a Nuclear Crisis: The 'Cuban Missile Crisis' and U.S. National Interests" (presented at the annual meeting of the International Studies Association, Atlanta, Ga., 1992), p. 2. See also Jutta Weldes, "Constructing National Interests," *European Journal of International Relations,* vols. 2–3 (September 1996), pp. 275–318; and Martha Finnemore, *National Interests in International Society* (Ithaca, N.Y.: Cornell Univ. Press, 1996).

17. Weldes, "Constructing a Nuclear Crisis," p. 5.

18. Ibid., p. 8.

19. Roxanne Lynn Doty, "Foreign Policy as Social Construction: A Post-Positivist Analysis of U.S. Counterinsurgency Policy in the Philippines," *International Studies Quarterly,* vol. 37 (1993), p. 298.

20. Ibid., p. 303. See also Shafer; Donald A. Sylvan and James F. Voss, eds., *Problem Representation in Foreign Policy Decision Making* (forthcoming); and Valerie M. Hudson with Christopher S. Vore, "Foreign Policy Analysis Yesterday, Today, and Tomorrow," *Mershon International Studies Review,* vol. 39 (1995), pp. 224–5.

21. My thanks to Chuck Taber at SUNY–Stony Brook for distilling this framework. Specific approaches to each of these levels tend to differ quite a bit from each other; I have tried here to encapsulate the general perspective of each.

22. Barry M. Blechman and Stephanie E. Levinson, "U.S. Policy and Soviet Subs," *New York Times* October 22, 1974. See also Raymond L. Garthoff, *Detente and Confrontation,* rev. ed. (Washington: Brookings Institution, 1994), p. 90, and Blechman and Levinson's "Soviet Submarine Visits to Cuba," U.S. Naval Institute *Proceedings,* September 1975, pp. 30–9. John E. Moore [Captain, RN, Ret.], *The Soviet Navy Today* (New York: Stein and Day, 1976), discusses these visits on pp. 31–2.

23. See Kissinger, pp. 634–5.

24. Garthoff, "Handling Cienfuegos," pp. 49–50; Kissinger, p. 632; and Ambrose, p. 380.

25. Isaacson, p. 287.

26. Garthoff, "Handling Cienfuegos," p. 48; Garthoff, *Detente and Confrontation*, pp. 87–94; and Kissinger, p. 635.

27. Elmo R. Zumwalt, *On Watch* (New York: Times Bonks, 1976), p. 311.

28. Ambrose, p. 381.

29. Richard Nixon, *RN: The Memoirs of Richard Nixon* (New York: Grosset and Dunlap, 1990), p. 486.

30. The Washington Special Actions Group was one of several interdepartmental groups centered in the NSC that were established by Kissinger and Nixon. Kissinger, in his capacity as special assistant to the president for national security affairs, managed both the NSC and these interdepartmental groups. See Alexander L. George, *Presidential Decisionmaking in Foreign Policy* (Boulder, Colo.: Westview Press, 1980), pp. 155, 177.

31. Isaacson, p. 295.

32. Kissinger, p. 639; Ambrose, p. 381; and Isaacson, p. 296.

33. Isaacson, p. 296.

34. Ibid., p. 286; and Kissinger, p. 639.

35. Isaacson, p. 296.

36. C.L. Sulzberger, "Ugly Clouds in the South," *New York Times*, 25 September 1970, p. 43.

37. Ambrose, p. 382.

38. Kissinger, p. 646.

39. Kissinger, p. 647; and Nixon, *RN*, pp. 487–8.

40. Kissinger, p. 649.

41. Nixon, *RN*, p. 489. Nixon's assertion is not entirely true, as Ambrose (p. 383) points out. See also the 1974 testimony by Blechman and Levinson in House Subcommittee on Inter-American Affairs, *Soviet Naval Activities in Cuba: Hearings before the Committee on Foreign Affairs*, 93rd Cong., 2nd Sess., 20 November 1974; Blechman and Levinson, "U.S. Policy and Soviet Subs"; Fenlon, pp. 40–5; and Kissinger, p. 651.

42. Nixon, *RN*, p. 489.

43. Ambrose, p. 383.

44. Garthoff, "Handling Cienfuegos," p. 47.

45. Kissinger, p. 639.

46. Graham T. Allison, *Essence of Decision* (Boston: Little, Brown, 1971).

47. Isaacson, p. 296.

48. Richard Nixon, "Hard-Headed Detente," *New York Times*, 18 August 1982, p. A21.

49. Nixon, *RN*, p. 486.

50. Haldeman with DiMona, p. 88.

51. Nixon, "Hard-Headed Detente," p. A21.

52. U.S. President, *U.S. Foreign Policy for the 1970s*, Report to Congress (Washington: 1971), pp. 158–60.

53. U.S. President, *U.S. Foreign Policy for the 1970s*, Report to Congress (Washington: 1972), p. 21.

54. Nixon, *RN*, p. 497.

55. Isaacson, p. 298.

56. Nixon, *RN*, p. 488.

57. Ibid., p. 486; Ambrose, p. 381; and Kissinger, p. 642.

58. Kissinger, p. 642.

59. Isaacson, p. 285.

60. Ibid., p. 299.

61. Kissinger, p. 637.

62. Ibid.

63. Isaacson, p. 292.

64. Hersh, p. 253.

65. Ibid., p. 251.

66. Kissinger, pp. 638–9.

67. Ibid., p. 639.

68. Alexander M. Haig, *Inner Circles* (New York: Warner Books, 1992), p. 253; Isaacson, p. 304.

69. Zumwalt, p. 311.

70. Ibid., p. 313.

71. Ibid.

72. Haig, *Inner Circles*, pp. 251–2.

73. Isaacson, p. 296.

74. Ibid.

75. Kissinger, pp. 639–40; and Isaacson, p. 298.

76. Isaacson, p. 298.

77. Kissinger, p. 640.

78. Ibid.

79. Ibid.

80. Haig, *Inner Circles*, p. 253.

81. Kissinger, pp. 640–3.

82. Ibid., p. 641.

83. Hersh, p. 254.

84. Kissinger, pp. 641–2.

85. Ibid., pp. 644–5.

86. Isaacson, p. 307, and Kissinger, p. 645.

87. John W. Finney, "Rivers Cites Soviet Power in New Defense Fund Plea," *New York Times*, 29 September 1970, p. 3.

88. Kissinger, p. 645; and Isaacson, p. 307.

89. Kissinger, pp. 646–7.

90. Haig recalls being sent to remind Dobrynin about the U.S. position while Kissinger and Nixon were on their way to Europe, though neither Nixon nor Kissinger seem to remember Haig playing the central role he claims in his memoirs. Haig reports that on 27 September Kissinger, en route to the Mediterranean, telephoned and told him to call on Dobrynin and repeat Kissinger's message that the United States would not accept a submarine base at Cienfuegos. He recalls that he then told Dobrynin, "Either you take those weapons out and dismantle the base at Cienfuegos Bay or we will do it for you." See Haig, *Inner Circles*, p. 254; and also Alexander M. Haig, *Caveat* (New York: Macmillan, 1984), p. 100. Dobrynin, Haig writes, was furious. Kissinger was no more pleased; he claimed Haig had exceeded his authority and "may have started a war." See Haig, *Inner Circles*, p. 255.

91. Strategic Arms Limitation Talks negotiator Gerard Smith recalled that during the SALT negotiations a Soviet delegate remarked to him, "When one bloody submarine goes to Cuba everyone in America goes crazy." See Gerard Smith, *Doubletalk* (Garden City, N.Y.: Doubleday, 1980), p. 215.

92. Marvin Kalb and Bernard Kalb, *Kissinger* (Boston: Little, Brown, 1974), pp. 211–2.

93. Tad Szulc, "White House Charge on Cuba Puzzles U.S. Officials," *New York Times*, 30 September 1970, p. 2.

94. Hersh, p. 255.

95. Bernard Gwertzman, "Moscow Scoffs at Sub-Base Issue," *New York Times*, 1 October 1970, p. 1.

96. Max Frankel, "U.S.-Soviet Ties: An Uncertain Crisis," *New York Times*, 15 October 1970, p. 12.

97. Hersh, p. 257.

98. Garthoff, "Handling Cienfuegos."

99. Zumwalt, p. 311.

100. Ibid. See also Isaacson, p. 310. The CNO also thought that the revised draft ultimately given to Ambassador Dobrynin was too loosely worded; see Zumwalt, p. 311.

101. See Dory, for example; see also Judith Goldstein and Robert O. Keohane, eds., *Ideas and Foreign Policy* (Ithaca, N.Y.: Cornell Univ. Press, 1993); Edward Rhodes, "Do Bureaucratic Politics Matter? Some Disconfirming Findings from the Case of the U.S. Navy," *World Politics*, vol. 47 (1994), pp. 1–41; Shafer; Sylvan and Thorson; and Sylvan and Voss.

102. In Richard Ned Lebow and Janice Gross Stein, *We All Lost the Cold War* (Princeton, N.J.: Princeton Univ. Press, 1994), p. 275.

103. Ibid., p. 97.

104. Sylvan and Thorson.

Ψ

Surviving the Peace

The Advent of American Naval Oceanography, 1914–1924

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T HROUGHOUT THE HISTORY OF the United States Navy, surviving the peace has proved as difficult as winning the war. At the conclusion of the worldwide carnage of 1914–1918, most Americans turned their backs on the prospect of armed conflict and foreign entanglements. In this political environment the Navy Department searched for ways to demonstrate its peacetime utility and its continuing financial need to a war-weary public and skeptical Congress. So it was that after displaying considerable promise during the Great War, oceanography figured prominently in one of the political survival strategies adopted by the Navy during the early 1920s and became a regular part of the fleet's mission through the financially difficult interwar years. The commitment first made by both the Navy and civilian science between 1914 and 1924, as well as their desire to cooperate (for both idealistic and practical reasons), permitted a quick response to the maritime challenges posed by the Axis twenty-one years after the guns went silent on the Western Front in 1918.

World War I and the U-boat provided a catalyst that accelerated American naval oceanographic studies, dramatically altered scientific practice, and

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profoundly affected the selection of new subjects for ocean science. Wartime projects under the aegis of the Naval Consulting Board and the National Academy of Sciences' National Research Council (or NRC) drew scientists from a great many specialties out of their normal academic or industrial environments to address the critical needs of the operational forces.[1] Antisubmarine warfare (ASW) and pro-submarine investigations provided considerable incentive and added new avenues to the study of the ocean depths, avenues that some scientists continued to pursue after the war ended.[2] In the course of this work, oceanography came of age in America and demonstrated its value to the United States Navy.

Between 1914 and 1918 oceanographic ASW research, as opposed to pro-submarine investigations, dominated the attention of the allied scientists who were asked to devise an effective way to neutralize the German submarine threat. In the United States this effort was organized along two parallel lines, one directed by the Navy and the other by the civilian scientific community at the request of the Navy Department.

In the Navy, the primary effort to draft scientists into the war effort was represented by the Naval Consulting Board (NCB), created in July 1915.[3] Secretary of the Navy Josephus Daniels, who established the Board, placed it under the direction of the famous inventor Thomas A. Edison to evaluate suggestions and inventions offered to improve the Navy's performance should America become involved in the war. Throughout its existence, the Naval Consulting Board remained an advisory body to the Secretary of the Navy. It could encourage research into and development of systems like the magnetic submarine detector invented by physicist Vannevar Bush.[4] But, having no research and development money of its own, the Board and its committees remained merely advocates, urging Secretary Daniels to support promising developments in the private sector.[5]

When the United States actually became a belligerent in 1917, Daniels expanded the Board's powers, and it instituted special committees to explore difficult wartime problems. As early as 26 October 1915 the Secretary had ordered the Navy's Bureau of Construction and Repair to investigate a means of detecting submerged submarines from a surface ship. One week after President Woodrow Wilson severed relations with Germany on 3 February 1917, the Naval Consulting Board created a Committee on Special Problems to coordinate naval and civilian efforts on U-boat detection and destruction, including those initiated by the naval bureaus and those sponsored by the National Research Council.[6] This committee, chaired by Board member Lawrence Addicks, divided the problem of ASW into its component parts for consideration by subcommittees. These subdivisions of the Addicks committee explored all available ASW tactics and techniques, including underwater sound,

nets, magnetic and electrical means, underwater searchlights and visibility, and air attack.[7]

To focus naval resources on the best areas of inquiry, Edison's staff invited a group of experts in ASW-related fields, nominated by the NCB, to gather in New York at the Engineering Society's building on 3 March 1917. In their conclusions these specialists recommended underwater sound and echo-ranging as the most promising avenue of exploration. Physics and physical oceanography immediately became vital to the national war effort. One month later the Naval Consulting Board recommended that Daniels divert $10,000 earmarked for the establishment of the new Naval Research Laboratory to the use of the Committee on Special Problems. The U-boat threat had become so important that the Board voted unanimously to place research on submarine detection above the creation of the long-desired NRL.[8]

After the New York conference, the NCB's Subcommittee on Submarine Detection by Sound gave its support to the promising work of the Submarine Signal Company of Boston, a specialist in underwater sound.[9] This firm had incorporated the powerful oscillator developed by Reginald A. Fessenden into a practical device for detecting icebergs and had demonstrated the possibility of determining ocean depth by means of echo-ranging. When the company's first U-boat detection device failed to impress the Navy Department, the NCB encouraged cooperative research by Submarine Signal, General Electric, and Western Electric at Western Electric's facility in Nahant, Massachusetts. Armed with the most complete knowledge science had to offer, the three firms explored various methods of submarine detection, including echo-ranging and promising hydrophone listening devices.

On the civilian side, the National Research Council furthered cooperation and education on the U-boat detection problem by arranging an international conference in June 1917. The council brought to Washington British experts, including the 1908 Nobel laureate physicist Sir Ernest Rutherford, and their French military counterparts, Majors Fabry and Abraham, and Captain Dupray, who were all trained in the pioneering underwater sound techniques of Paul Langevin and the Swiss Constantin Chilowsky. Like the Naval Consulting Board, which had set three commercial firms to working together in Massachusetts, the NRC supported the creation of the Naval Experimental Station in New London, Connecticut, recruiting for it, among others, Robert Millikan of the University of Chicago and the University of Wisconsin's Max Mason to apply their skills to the ASW problem.* Mason was to provide the creative

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* Millikan (1868–1953), a physicist who first isolated (in 1911) the electron, won the 1923 Nobel Prize in physics. Mason (1877–1961), a mathematician, was known for (beside ASW inventions) research in calculus of variations and electromagnetic theory.

genius behind several generations of the Navy's "M," or multiple-tube, passive submarine sensors. This apparatus focused sound to ascertain its source; to determine the direction from which the sound came, the operator needed only to seek the maximum output on his earphones by turning a dial.[10]

In addition, the National Academy of Sciences collected scientific intelligence from around the world through Research Information Service offices established by the NRC in Washington, Rome, London, and Paris. Information from participating scientists kept the NRC and the Navy abreast of the latest work done on underwater sound and echo-ranging.[11]

Days before the Armistice, American naval representatives journeyed to Paris for a conference on "supersonics," a term which then referred to underwater echo-ranging. Meeting with the French and British between 19 and 22 October 1918, the Americans received more complete information about Langevin's progress in piezoelectric research as well as an underwater sound transmission device that the French had designed to apply the theories developed by Chilowsky and Langevin.[12]

Reports on the conference were prepared by both the American associate scientific attaché in Paris, Karl T. Compton, and one of the leading scientists in the American effort to build an operational "supersonic" device, Professor J.H. Morecroft of Columbia University.[13] They not only described in great detail the performance of the Langevin device but also demonstrated a heightened appreciation of the properties of the ocean that affect undersea sound transmission. In the course of American experiments in underwater signaling, Compton "noticed, as have all those who have been engaged in listening under water, great irregularities in transmission due certainly to the influence of the water medium." He went on to discuss the viscosity of the water, its temperature, the presence of marine life and debris, and the effect of bubbles on sound transmission.[14]

Oceanography had quickly become indispensable to modern ASW. In the short period of time America actually participated in World War I, scientific research helped keep the U-boats at bay. When the advent of convoys in 1917 required some capability for detecting U-boats, industry in the United States rapidly manufactured three thousand SC hydrophones, with their characteristic rotating T-bar and stethoscope listening set. Although primitive, these detectors, protruding from the bottom of American and British submarine chasers, forced German submarine commanders to take greater care in approaching convoys. In many instances, however, developments took longer to reach the operational forces. Vannevar Bush's device for detecting a U-boat as it broke a magnetic field was barely installed in British minesweepers for testing before the conflict ended. Nonetheless, these and other wartime experiences identified science as an

important partner in modern naval warfare. As historian A. Hunter Dupree observed many years later, nothing would replace effective weapons, doctrine, and seamanship, but "the very approach to the problem as one that could be solved only by massed and coordinated scientific resources demonstrated clearly that a new era of warfare had arrived and that science had an essential place in it."[15]

What sort of naval warfare lay in the future? In 1919 very few Americans wanted to address that question. Peace and a return to normalcy, not war, reigned uppermost in their minds. In his 1921 inaugural address, President Warren G. Harding reflected the popular American mood when he offered to place the very ambitious 1916 warship construction program on the table at an international naval armaments conference.[16] When Secretary of State Charles Evans Hughes formally proposed the meeting, the sheer cost of war or even a naval arms race, especially one between the United States, Great Britain, and Japan, provoked wide public support for his proposal. Naval building competition, as had occurred between Britain and Imperial Germany before the Great War, was perceived by the voting public as well as by many in the Congress as destabilizing, a waste of resources, and a threat to national security. Hughes also argued that a policy of conciliation combined with a willingness to negotiate would diffuse international tensions, especially with Japan over the Anglo-American presence in the western Pacific, and with Britain over naval supremacy.

The conference that began in Washington on 12 November 1921 halted the substantial American construction program authorized five years before and established a fixed ratio of relative battleship strength between Britain, the United States, Japan, France, and Italy. These limits and other restrictions accepted by the signatories at the Washington Naval Conference laid the foundation for interwar American naval policy. Congress not only accepted the limits set by the Conference in 1922 but for the next twelve years refused to authorize spending and construction to meet even the minimum force levels permitted by the agreements.[17] As these events unfolded, the Navy struggled both to meet its operational commitments and to convince the public and the Congress of its value in peacetime.

Shortly after the Washington Naval Conference, Dr. Harvey Hayes wrote a memorandum to his supervisor, Captain John Halligan, Jr., officer in charge of the Navy's Engineering Experiment Station in Annapolis. This correspondence, dated 19 February 1923, effectively marks the beginning of a firm naval commitment to modern oceanographic research. A Navy physicist and former Swarthmore physics professor, Hayes had become frustrated with congressional reluctance to provide regular and adequate funding for NRL and had voiced concern about the adverse effect it might have on his underwater sound work

and other projects destined to move to the Laboratory. At the end of his memorandum's second paragraph, he asserted that "the Bellevue Station [NRL] will never be definitely and adequately supported by Congress until its members are made to realize the importance of military research, as such, or until their interest in the station is aroused through the successful application of the results of these researches for other than military purposes."[18]

Hayes suggested a well publicized commitment to oceanographic research. Scientific and technical experience gained in hunting U-boats during the war might now unlock the nature of the ocean. With a program of this sort, the Navy could leave the war behind and at the same time reach beyond traditional hydrography, navigation aids, and mapmaking to acquire a better understanding of its own natural environment. The same research that would enhance appreciation of the ocean and vastly improve navigation and the safety of ocean travel would also facilitate naval operations, on the surface and submerged.[19]

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These ideas immediately struck a chord, appealing to those who valued the practical and profitable side of such a postwar policy, as well as to those engaged in the science. Hayes convinced the Navy Department that a program of oceanographic research would enhance its public image by providing tangible evidence of the Navy's peacetime service to the nation. A commitment of this sort might also induce Congress to support more generously and regularly the newly created Naval Research Laboratory, then under construction at Bellevue, on the Potomac River five miles south of the Capitol.

Professor Hayes reasoned that any field of naval research pursued so as to elicit the support of Congress must meet certain criteria. For example, the new endeavor should complement and not interfere with the main mission of NRL, which was to conduct applied research in support of naval operations. Further-more, the work would have to fall exclusively within the Navy's sphere of influence and be congruent with established naval policies. Most importantly, Hayes wanted to generate, on a regular basis and with a minimum of expense, data valuable enough to attract the attention of civilian scientists and the press. In his historic memo to Halligan, Hayes concluded that "these researches should be undertaken in the field of oceanography."[20] The interdisciplinary nature of this science would attract the attention of a great many talented investigators to the study of the Navy's operational realm. Along with biologists, geologists, chemists, and physicists, the Navy would contribute to human knowledge in a

way that would directly affect the economic welfare of millions. Oceanographic research might easily translate into improved cable communications, easier transportation, and seafood harvests before which the biblical multiplication of the loaves and fishes might pale by comparison.

He suggested further that the Navy mount an oceanographic expedition covering a precisely defined area of the Pacific Ocean. If the Department were carefully to court and select the participating civilian scientists and institutions, the reputations and achievements of those involved would soon make the Navy's project the center of scientific attention. To sustain this credibility and clearly identify the project with the Navy, NRL would publish the results of the expedition in a laboratory contributions series. Hayes felt that this project, if properly organized, would draw financial grants and gifts galore while placing the peacetime Navy and NRL in the limelight.

For Hayes the time seemed perfect for this type of venture. Recent research had provided some of the best supporting technology for oceanography ever developed. The Naval Hydrographic Office and the Bureau of Fisheries of the Department of Commerce could contribute a large portion of the necessary equipment, and the expedition could turn to the Bureau of Engineering for both state-of-the-art communication equipment and a sonic depth finder, or SDF. Hayes had recently developed the SDF for the Navy, based upon his research into active sonar during the war. This device projected the sound generated by a Fessenden oscillator toward the bottom of the ocean and used the time the echo took to return as an indication of depth. Early evaluations conducted by the Navy at the Engineering Experiment Station confirmed the importance of the SDF for both the Navy and the scientific community. At the annual meeting of the National Research Council in April 1922, Harvard geologist William M. Davis had suggested more extensive testing of the SDF, including alterations to the device to permit determination of bottom slope as well as the depth of the ocean at any given point.[21]

To the universal acclaim of the scientific community, Hayes had then used his invention to make the first complete bottom profile of any ocean, during the June 1922 transatlantic crossing of the destroyer *Stewart* (DD 224) from Newport, Rhode Island, to Gibraltar. With Hayes on board, the *Stewart*, under the command of Lieutenant Commander Norman R. Van der Veer, made nine hundred soundings of the ocean bottom to depths beyond three thousand feet. The news of this accomplishment went through the scientific community like a bolt of lightning. As historian Susan Schlee observed, "The results were indeed spectacular. The *Challenger** in her entire three-and-a half year voyage had taken

* HMS *Challenger's* round-the-world cruise, which began in 1872, gathered physical, geological, biological, and chemical data of great importance to international oceanographic research.

less than three hundred soundings in depths exceeding 1,000 fathoms, and in the same years the Coast Survey considered it a good field season when 100 or so deep soundings were collected."[22] The Navy's new instrument gave scientists their first comprehensive look at the configuration of the ocean floor in all its irregularity. Sound now at last began to reveal what years of work with rope and wire sounding lines had only suggested. Civilian science quickly concluded that the number and range of naval vessels as well as the revolutionary potential of the SDF made the U.S. Navy an indispensable partner in the exploration of the ocean.

To implement his ideas, Hayes looked to the Navy's history for a paradigm. He suggested mounting an expedition not unlike that led by Lieutenant Charles Wilkes nearly a hundred years earlier. The Navy would provide a fully outfitted and manned vessel with accommodations for approximately fifty government and civilian scientists. Specialists in the various disciplines of ocean science would assist the Navy in selecting regions for investigation, and both the universities and research institutions sponsoring the participants would help defray the expenses. Hayes insisted upon naval direction in every phase of preparation, in order that the maximum publicity and popular goodwill might accrue to the Navy for the expedition and its successes. Although prominent academic institutions and the National Academy of Sciences would certainly assist in the selection of participating scientists, final invitations to join the expedition would come from the Secretary of the Navy.

Hayes concluded his memorandum by insisting that his proposition went beyond the Navy or any single expedition. In an age of naval armaments treaties, force reductions, and budget cutbacks, the Navy needed the financial and professional support of the academic community and private research institutions. It would also have to draw on the resources and cooperation of other federal agencies. If the Navy made a determined effort, Hayes felt, an oceanography program could take on a life of its own: "I am of the opinion that if the proposed research work is once started by the Navy that it will continue indefinitely, and, if this proves true there is no doubt but that the researches will suggest many improvements in the apparatus that will result in continuously making the work more effective. It is along these lines that the Bellevue Station will cooperate."[23]

As it went through channels, forwarded by Halligan, the Hayes memo gathered a cluster of positive endorsements from all quarters. The Bureau of Navigation applauded Hayes's initiative, and Captain Frederic B. Bassett, Hydrographer of the Navy, enthusiastically supported the proposal, citing eight precedents for Navy-supported oceanographic research. Assistant Secretary of the Navy Theodore Roosevelt, Jr., noted that the existing operating force plan made Hayes's recommendations impossible but insisted that the Chief of Naval

Operations allow for such a project in a revised operations plan in the near future.[24]

With his memorandum Harvey Hayes demonstrated political sensitivity, loyalty to the Navy, personal ambition, and a talent for weaving all of these disparate qualities into a practical and appealing policy proposal. The importance of his proposition did not lie in its suggestion that the Navy commit itself to science; with a tradition that included Wilkes's leadership of the United States Exploring Expedition of 1838–1842 and Lieutenant Matthew Fontaine Maury's groundbreaking work on physical oceanography, the Navy and the ocean sciences were old friends.[25] The importance of the memorandum lay in its new perspective on the future and in its author's call for a broader and deeper collaboration between ocean science and the Navy.

While saving NRL and advancing his own work provided a personal catalyst, a more productive naval-scientific relationship emerges from the memorandum as the author's central ambition. Hayes suggested the need to go beyond the necessary and useful work of developing charts, instruments, and aids to navigation at the Hydrographic Office and the Naval Observatory: he demanded a higher priority for basic research in the Navy. With naval resources, scientists in and out of federal service could achieve fundamental insights into the geology, chemistry, and physical attributes of the ocean environment, for the benefit of naval operations and the general public. All of his proposals pointed toward a long-term, mutually beneficial partnership in basic research between the Navy and the civilian professionals dedicated to the perennial accumulation and analysis of oceanographic data. The activities Hayes proposed offered the Navy a financial benefit as well: if it stood on the cutting edge of oceanographic knowledge, the Navy would have less trouble procuring funding support for combat readiness and the Hydrographic Office's vital chartmaking services.

Professor Hayes could not have laid sole claim to these ideas, nor in some cases could he have taken credit for presenting them first. But unlike scientists who had suggested this kind of naval commitment in the past, Hayes had the advantage of making the suggestion from within the Navy and of formulating it as a practical response to political and financial crisis. His timing, his experience within the Navy Department, and his argument that oceanographic research would not only provide knowledge but practical solutions to pressing naval problems made his proposal very appealing to all parties, whatever their motives or interests.

The excitement caused by the potential of the depth finder and Hayes's February 1923 memorandum to Captain Halligan prompted many within the scientific community to recommend immediate use of the SDF for oceanographic exploration. Ocean bottom profiles similar to those taken by the *Stewart*

in the Atlantic seemed the natural course. Professor Davis at Harvard suggested naval participation in the second Pan-Pacific Science Congress, scheduled for Sydney and Melbourne, Australia, in August 1923. Secretary of the Navy Edwin Denby had received notice from the State Department on 22 January that Great Britain had asked the U.S. Navy to participate. Davis submitted that a naval vessel equipped with an SDF could conduct a series of bottom profiles while en route to the symposium. He predicted that "if successfully carried through there can be no doubt that the achievement would be the outstanding feature of the Congress. It would be a handsome and generous testimony on the part of our Navy to the importance of the Congress and it would give a great impulse to the exploration of the oceans. It would receive the recognition that it would deserve."[26] Nevin M. Fenneman, chairman of the NRC's Division of Geology and Geography, echoed Davis's opinions in a letter to Denby on 30 April, saying that were there to be naval participation he "might be pardoned for a certain amount of pride in the traditional value of the American Navy as an ally to scientific research."[27]

"By suddenly providing a way to examine the invisible more closely, [the sonic depth finder] offered both material and psychological benefits. . . . [It] turned on an acoustic 'light' in a very dark room."

To the acclaim of the Pan-Pacific Congress's organizers, Secretary Denby agreed to allow the Navy to participate. After initially rejecting the twenty-year-old *Denver* (reclassified in 1921 as CL 16) for the job and investigating the availability of funds for the enterprise, he ordered the newly commissioned light cruiser *Milwaukee* (CL 5) to make the trip, with Captain William C. Asserson in command. Captain Bassett, as chief of the Navy Hydrographic Office, instructed Asserson to make a series of ocean bottom profiles en route to Australia and, at the Congress, give a presentation on the SDF and its operation using the profiles as exhibits. Bassett assured him that he could count on the assistance of Dr. Alfred Brooks of the Department of the Interior and of geologist William H. Hobbs of the University of Michigan.[28]

The SDF presentation was one of the highlights of the Congress. When he read his paper on 27 August 1923, Captain Asserson illustrated his comments with a chart showing a line of soundings and bottom profiles from the Columbia River in the American Northwest to Sydney, via Honolulu, Samoa, and the Fiji Islands. The delegates took considerable interest and afterward came aboard *Milwaukee* to pepper him with questions about the SDF.[29] If the Navy and Harvey Hayes wanted public attention, the summer voyage of the USS *Milwaukee* to Australia gave them a very satisfactory first taste.

William Hobbs at Michigan shared Hayes's desire to launch an extensive oceanographic program in cooperation with the Navy; in 1921 they had tested the SDF together in the western Pacific, and Hobbs had long supported collaborative research ventures. In 1920 he had suggested an oceanographic expedition in cooperation with the Navy; the Chief of Naval Operations, Rear Admiral Robert E. Coontz, had looked favorably upon the proposal. Hobbs had then lobbied the Geological Society of America and the National Research Council, and he now saw in the Hayes recommendations an opportunity to launch the project with considerable support from the Navy and the scientific community. In December 1923 he visited Secretary Denby, following up on 7 January with a letter offering specific proposals for cooperative research.

In his January 1924 letter, Hobbs suggested the Pacific and Caribbean as the focuses of the joint oceanographic expedition and offered some ideas on organization and logistical support. The Navy would supply the ship, officers, crew, scientific library, and a considerable amount of instrumentation, including the remarkable SDF. Research institutions and universities sponsoring the participants would pay salaries and meet the cost of food for the voyage. Hobbs insisted upon a comprehensive approach to the research, embracing geology, anthropological fieldwork, zoology, and botany, as well as extraordinary efforts to collect the best oceanographic data possible. The SDF would take bottom contour readings; scientists would measure waves, employ seismic instruments, and acquire an apparatus for rock-core drilling to secure deep samples from Pacific coral reefs.[30]

In February, Denby instructed the Hydrographic Office to seek the advice of the National Research Council on the Hobbs and Hayes proposals. Captain Bassett, the Hydrographer, accordingly asked the opinion of the NRC on both the kind of oceanographic exploration the Navy should pursue and the merit of the Hobbs proposal;[31] Gano Dunn, chairman of the NRC Executive Board, referred the questions to the Division of Foreign Relations' Committee on Pacific Investigations. Herbert E. Gregory, director of the Bishop Museum in Honolulu, chaired this committee, and Albert Barrows, secretary of the Division of Foreign Relations, was the Division's liaison in Washington, D.C.

Barrows immediately set to work collecting opinions from the committee members, including Gregory, John C. Merriam of the Carnegie Institution of Washington, and Thomas Wayland Vaughan, incoming director of the Scripps Institution for Biological Research in La Jolla, California.[32] All quickly communicated their enthusiasm for cooperative oceanographic work with the Navy (although a few had reservations about the particulars of Hobbs's proposal). Indeed, Walter T. Swingle of the Department of Agriculture commented that he had "long believed that it was a great mistake not to do a certain amount of scientific work under the auspices of the Navy Department."[33] Barton W.

Evermann of the California Academy of Sciences praised Hobbs's broad definition of the fundamental problems and the importance of cooperation with the Navy.[34] From the U.S. Coast and Geodetic Survey in Washington, William Bowie recommended strong direction by a single person or agency to provide central authority and a clear definition of the expedition's goals.[35]

Parallel inquiries conducted by Bassett's second in command, Commander Guy Davis, with Professor Andrew Lawson, chairman of the NRC Division of Geology and Geography, revealed that a major survey, or "reconnaissance," voyage might have its advantages.[36] On 29 February 1924 Davis asked Lawson, who taught mineralogy and geology at the University of California, for his views on cooperative oceanographic ventures; Lawson responded with a richly detailed seven-page memorandum. He agreed with Hayes that the Navy would perform a public service by pursuing oceanographic research while pursuing its own professional and financial needs in the process. He described an involved program of geological, physical, chemical, and biological studies requiring a staff of thirty-three scientists, observers, and assistants. Lawson suggested a program of five years' duration to investigate the continental shelf off the American West Coast and its relation to the continent and to the ocean bottom. The project would include mapping the region, along with physical and biological investigations. The Navy and its associates in this endeavor would have to impose strict financial and geographic limits on the project. He estimated that if provided with the proper laboratories, personnel, and equipment, to the tune of $90,000, the Navy and civilian science would emerge with scientifically worthwhile and publicly impressive results. As he later commented in this connection to the 1924 NRC annual meeting, "Any comprehensive plan of oceanography which the Navy may adopt will require the advice, if not the direction, of a disinterested body representing the various sciences concerned, and it would be difficult to find a more appropriate and competent body than the Division of Geology and Geography of the National Research Council. The proposal which the Navy has in contemplation is of the greatest importance for the extension of scientific knowledge in a domain where our knowledge is very scant."[37]

As the responses solicited by Bassett and Davis accumulated, the difficulty of properly organizing and financing a single, comprehensive expedition emerged as the central concern. Leonhard Stejneger of the Smithsonian Institution informed Barrows and Dunn (of the NRC Executive Board) that although a large expedition sounded attractive, he doubted its feasibility and long-term value. Stejneger suggested instead a series of smaller, more focused projects in conjunction with the Navy; these, he argued, would lend themselves to results of higher quality at affordable cost. He praised the work done on the famous voyage of HMS *Challenger* but insisted that general reconnaissance projects could not yield as much significant data on the immense Pacific Ocean as would

numerous smaller, focused, and carefully organized expeditions.[38] Marine biologist William E. Ritter (director of the Scripps Institution) heartily agreed with that view, and Thomas Wayland Vaughan, an NRC committee member who would succeed Ritter at Scripps, also feared that a single, major exploratory expedition would fall short whereas a series of briefer, well focused and financed ventures might succeed gratifyingly. Vaughan went a step further, recommending that the Secretary of the Navy call a general conference to define the character and extent of any expeditions the service chose to sponsor.

Barrows and Gano Dunn communicated to Captain Bassett the consensus of these opinions, that the multiple expeditions and the strong central direction preferred by most NRC scientists more closely corresponded to some of Professor Hayes's suggestions than to the plan put forth by William Hobbs. The NRC's advice also provided the Navy a way to define more precisely the action it planned to take. Secretary Denby and Assistant Secretary Roosevelt came to the conclusion that the Navy should pursue oceanographic studies in a way that would provide the broadest possible benefit to both the nation and the Navy.

With the approval of the incoming Secretary of the Navy, Curtis D. Wilbur, and on the advice of Vaughan, Roosevelt began preparations to convene a federal interagency conference on oceanography (ICO) in Washington. He wanted the participants to suggest the most profitable application of federal, and particularly naval, resources; in fact the proposals made at the ICO would determine the nature of the naval commitment to oceanographic research for the next two decades.

On 2 June 1924, Roosevelt, then acting Secretary of the Navy, sent out invitations to prominent civilian scientists, scientific institutions, government agencies, and also naval bureaus and activities. Following the suggestions of Harvey Hayes, Roosevelt made sure the Navy maintained a high profile for the sake of political utility and public relations but did not lose sight of the genuine value of the scientific exploration under consideration. In his invitation he committed the Navy to appeal to Congress for funds to finance the exploration the interagency conference might recommend.[39] Roosevelt received positive responses to his invitation from sixty-one scientists and federal officials representing twelve different government agencies and private institutions.

The conference opened at the Navy Department on 1 July 1924 under the able direction of the Hydrographer of the Navy, Captain Bassett, in the capacity of "Secretary General." Harvey Hayes attended, as a representative of the Navy's Bureau of Engineering. Other major participants included George Littlehales from the Hydrographic Office, Commander H.S. Howard of the Bureau of Construction and Repair, Austin Clark from the Smithsonian, William Bowie and six colleagues representing the committees of the National Academy of Sciences and the National Research Council, and Dr. Henry Bryant Bigelow

of the Museum of Comparative Zoology at Harvard, who appeared on behalf of the Bureau of Fisheries. The assembled scientists and government leaders developed the Hayes initiative well beyond the intent of the original February 1923 memorandum. In their report to Secretary Wilbur, the conference participants emphasized the great utility of the proposed investigations. Of the objectives they defined, improving humanity through discovery and exploration and preserving human life were, respectively, third and fourth; learning how to use the resources of the sea and improving communication through submarine cable and radio emerged as the primary goals.

How should the scientific community accomplish these objectives? The consensus at the 1924 meeting counseled against another *Challenger* expedition and encouraged instead an "intensive study of selected regions and problems," with the Gulf of Mexico–Caribbean area first on the list. The ICO requested at least a single vessel and crew from the Navy, and hoped for more, to explore this body of water and the areas immediately adjacent, from the North Atlantic down to the Canal Zone. Thereafter, the work could expand into the Pacific, with an initial emphasis on the northern portions of that ocean. A committee of specialists at the ICO estimated that instruments and equipment would cost approximately $50,000, with the Navy, other federal agencies, and private institutions sharing the burden. They envisioned a scientific staff of at least nine: a physical oceanographer, a biologist, a geologist, and about six technicians and assistants. The first three had to be scientists of the very highest caliber, whose home institutions would absorb their basic expenses, save for subsistence and round-trip travel. The projected total cost of the project would be $57,500.

Although the conference placed the greatest emphasis on geology and geophysics, the problems given priority as the major concerns for the near future represented all of the major disciplines within oceanography. The invention of the SDF opened many opportunities to study the configuration of the ocean bottom. Those interested in the Earth's crust no longer suffered from blindness. Eager conference participants wanted to study "changes in the size and shape of the bottoms of the seas, such as shifting of shorelines, warping of the margins of continents and submarine upheavals and dislocations." Greater understanding of the sediments that compose the ocean bottom as well as violent changes like earthquakes and volcanoes now appeared to scientists in the broader context of ocean bottom profiles and some of the first regional maps of the ocean floor. To this the physicists added their desire to gain a greater appreciation of gravity variation in the Caribbean and Pacific area. Other goals included the study of currents, both shallow and deep water, the temperature, salinity, density, and general chemistry of seawater, and the interaction of the atmosphere with the surface of the ocean.

In an era of dramatically reduced spending on the armed forces, the final conference report dared to express optimism and a sense of permanence: "The recommendations embodied in this report are based upon the expectation that research in oceanography will take a permanent place among the activities of the Navy." The report recommended that the Secretary of the Navy consider appointing a continuing advisory committee to serve as the program's advocate in the budget process and to fashion an efficient administrative system for its early stages. Captain Bassett and his assistant at the Hydrographic Office, Lieutenant Commander George E. Brandt, received nomination and quick approval as chairman and secretary of the new committee. Other participants in the ICO who agreed to serve included Captain R.O. Crisp of the U.S. Coast Guard, Lieutenant Colonel C.A. Seoane of the Army Signal Corps, Littlehales of the Hydrographic Office, the NRC's Bowie and David White, Clark of the Smithsonian, Ball of Agriculture, and Bigelow at Harvard. Captain J.P. Ault of the Carnegie Institution in Washington, master of the nonmagnetic research vessel *Carnegie*, also joined the committee; his advice would prove invaluable in the practical preparations for going to sea. The scientists wanted the entire program referred to as "Maury U.S. Naval Oceanographic Research," after the premiere ocean scientist in the service's history, Matthew Fontaine Maury.

The most remarkable aspect of the conference emerges from the notes taken on the proceedings by Bassett as Secretary General. A genuine excitement took hold of those in attendance. Federal agencies envisioned harvesting the sea with greater efficiency, making navigation safer, promoting communication and submarine cable projects, and countless other productive ventures. Ocean scientists, who perennially suffered from inadequate funding and the lack of suitable ships for research at sea, realized the potential in cooperative work with the Navy and other federal agencies. In his effort to sustain the Naval Research Laboratory and promote naval research generally, Harvey Hayes had unleashed a remarkable amount of pent-up enthusiasm, determination, and energy.

Development of the SDF had played a critical role. Usually the effect of an instrument, no matter how useful, remains limited to the task at hand. It liberates the scientist from repetitive chores, makes an awkward task easier, or helps overcome physical obstacles. The sonic depth finder did all of this and more for those studying the ocean. By suddenly providing a way to examine the invisible more closely, it offered both material and psychological benefits. For centuries scientists had had to rely on rope, wire, gathering devices, and weights to sense the topography of the ocean bottom. While it did not preclude the continued use of these tools to attain certain research goals, the SDF provided a picture of contours of the earth that had lain submerged and beyond the reach of human eyes for centuries. It did not make the ocean transparent, but to a remarkable degree it freed a captive scientific community from severe physical restraints

and opened a wide array of promising research opportunities. With the SDF, Harvey Hayes turned on an acoustic "light" in a very dark room. His invention not only permitted scientists to see but awakened them to new, stunning possibilities for oceanography. In the years immediately following the Great War, the United States Navy was determined to pursue those possibilities for itself and the country.

Oceanography came of age in both Europe and the United States by serving critical purposes. For northern Europe, it was fisheries management and economic necessity that funded and drove this type of research; in the United States, the U-boat threat of the Great War mobilized the resources necessary to initiate and support large-scale oceanographic studies. As underwater sound emerged as the most promising method of submarine detection, the Naval Consulting Board and the National Research Council realized that effective ASW required sustained research, pure and applied, in various aspects of oceanography.

After the war, the Navy turned to oceanography as a way to survive the peace and contend with contracting budgets. The worldwide activities of the Hydrographic Office kept the service involved in oceanography in the early postwar period. While certainly significant and important, these efforts did not, however, emerge from the background until the Hayes memorandum of 19 February 1923. In it the former Swarthmore physicist offered a practical, concrete program to broaden the Navy's popular and political appeal by demonstrating that it could educate Americans in peace as well as destroy an enemy in war. In making these proposals, Hayes sought to induce the Navy to work for a deeper appreciation of its own operating environment. While it was reasonable and expedient for a navy to explore the ocean, these proposals also served Hayes and his underwater sound program in a very practical way. If oceanography could capture the imagination and resources of the Navy, the sound program at the Engineering Experiment Station would receive an adequately funded new facility at the Naval Research Laboratory in Anacostia to continue ocean research with important antisubmarine applications.

In 1924 at the Interagency Conference on Oceanography, the Navy Department embraced the suggestions made by Hayes and the NRC's Andrew Lawson, committing itself to oceanographic research. With the ICO the Navy took its first step toward formulating a coherent research program in oceanography to support its mission.

Unfortunately, the program would thereafter nearly die. The fiscally conservative Calvin Coolidge refused to approach Congress for funding to carry out the ICO's recommendations. In spite of this setback, the interwar years still marked the beginning of the Navy's commitment to the ocean sciences, because

supporters of the Navy's fledgling oceanographic effort and the ICO agenda averted complete disaster by departing from customary institutional relationships and procedures. Consultations, informal agreements, and personal contacts partially offset the effect of denied centralized sponsorship by skillfully combining the physical and human assets of the Hydrographic Office with those of the civilian oceanographic community. In this way, there evolved before the Second World War a *common practice* that would sustain important research reflecting scientific and naval cooperative priorities in the Pacific Ocean, the Caribbean Sea, and the Gulf of Mexico.

Notes

1. Susan Schlee, *The Edge of an Unfamiliar World: A History of Oceanography* (New York: Dutton, 1973), p. 265; and Submarine Signal Co. to Hydrographic Office, #17518 of 1 April 1909, box 193, Naval Hydrographic Office General Correspondence 1907–1924 [hereafter Hydro-Gencorr], record group [RG] 37, National Archives [NA].

2. The term "pro-submarine" denotes research undertaken to enhance the offensive and defensive capabilities of submarines.

3. A. Hunter Dupree, *Science and the Federal Government: A History of Politics and Activities to 1940* (Cambridge, Mass.: Belknap Press of the Harvard Univ. Press, 1957), pp. 318–9; and Lloyd N. Scott, *Naval Consulting Board of the United States* (Washington, D.C.: Navy Department, 1920).

4. Bush was a physicist working for J.P. Morgan's American Radio and Research Corporation of Medford, Massachusetts. During World War II he would direct the National Defense Research Council and later the Office of Scientific Research and Development. For further information on this device, which never detected a U-boat in operational use but was successfully tested in America and Great Britain and was deployed in British submarine chasers, see Vannevar Bush, *Pieces of the Action* (New York: Morrow, 1970), pp. 72ff.

5. Thomas Robins (secretary of the Naval Consulting Board [NCB]) to Secretary Daniels, NCB to Daniels, and NCB to Daniels,18 March 1918, 22 May 1918, 23 May 1918, respectively, box 47, NCB, Navy Department, Correspondence Files [hereafter NCB 1915–1923], RG 80, NA.

6. In 1916 the National Academy of Sciences, at the request of President Woodrow Wilson, established the National Research Council, or NRC, to facilitate research by assembling committees of scientific and technical experts in many war-related fields. George E. Hale, Chairman of the NRC, to President Wilson, 26 March 1918; Wilson to Hale, 19 April 1918; Hale to Wilson, 22 April 1918; Wilson to Hale, 8 May 1918; Hale to Wilson, 10 May 1918; and J.F. Tumulty (secretary to the president) to Hale, 13 May 1918, all in folder, "Relationship between NAS and NRC, Executive Board," Science Advisory Board, National Academy of Sciences [hereafter NAS] Archive, Washington, D.C. These documents relate to the creation of the NRC by executive order and its official relationship to the agencies of the federal government. See also Dupree, pp. 327-8.

7. Schlee, p. 245; "Problems Assigned to the Board by Secretary Daniels . . . ," 26 October 1915 and 10 February 1917, box 47, NCB 1915–1923, RG 80, NA; Scott, pp. 14–5, 67–83; Daniels to the NCB, 7 February 1917; Daniels to the Bureau of Construction and Repair, 26 October 1915; and Daniels to the NCB, 10 February 1917, box 47, NCB 1915–1923, RG 80, NA.

Daniels felt the pressure of editorial columns criticizing his lack of success with the ASW campaign; even scientific journals and magazines took up the critical chorus (editorial, *Scientific American*, 11 August 1917, box 47, NCB 1915–1923, RG 80, NA).

8. Robins to Daniels, 13 April 1917, box 47, NCB 1915–1923, RG 80, NA.

9. For a general discussion of the underwater sound efforts of the Submarine Signal Co., the ancestor of the modern Raytheon Corporation, see *Submarine Signal Log* (Raytheon, 1963), box 3, Marvin Lasky Papers, RC 21-5, Navy Laboratories Archive, David Taylor Research Center, Carderock, Md. The subcommittee was part of the Special Problems committee.

10. Schlee, pp. 246ff. After the war, only the Navy's underwater sound team, under the direction of Dr. Harvey C. Hayes, transferred from the Engineering Experiment Station in Annapolis to NRL in Anacostia, and the Submarine Signal Company remained in the underwater acoustics business. Daniel J. Kevles, *The Physicists* (New York: Alfred Knopf, 1978), pp. 118–24; Robert H. Kargon, *The Rise of Robert Millikan: Portrait*

of a Life in American Science (Ithaca, N.Y.: Cornell Univ. Press, 1982), pp. 86–7; Scott, pp. 14–5, 67–83; U.S. Navy Dept., *History of the Bureau of Engineering of the Navy Department during the World War* (Washington, D.C.: U.S. Govt. Print. Off., 1922), pp. 47–54.

11. After moving to the United States before World War II, Chilowsky was involved in the exploration of plastic materials to replace the Rochelle salt crystals originally used in his piezoelectric work before and during the Great War. (See note 12 for a definition of the piezoelectric effect.) He was in contact with Dr. John Tate, head of Division 6 of the National Defense Research Council, in October of 1943 on this same subject. Chilowsky to Tate, 29 October 1943, box 61, Office of Naval Research—General Correspondence of the Coordinator of Research and Development 1941–1945, RG 298, NA; and John Herrick, *Subsurface Warfare: The History of Division 6, National Defense Research Committee*, chap. 5, NAS/Naval Studies Board Archive.

12. Langevin's device was a primitive transducer designed to send out a conical beam of sound from a surface ship or submarine with sufficient power to produce a return echo. This would enable the monitoring vessel to determine the location of the object causing the echo, whether iceberg, animal, ocean bottom, or submarine. The piezoelectric effect, upon which Langevin's work was based, is the generation of an electric polarization in certain crystals, Rochelle salt for example, by applying mechanical stress. Its converse—physical deformation of a crystal by the application of an electric charge—is the basis of the active sonar transducer.

13. K. T. Compton was attached to the Research Information Service, sometimes called the Research Information Committee, in Paris. Later in his career he became the president of the Massachusetts Institute of Technology and, during World War II, served on the National Defense Research Council.

14. Research Information Committee, Paris, to Research Information Committee, Washington, D. C., "Report of the Conference on Detection of Submarines by the Method of Supersonics" and "Report by Professor Morecroft on 'Historical Survey of Developments in the United States,' " Reports 161 and 161A, 31 October and 7 November 1918, respectively, box 11, Records of the NAS—Paris Report Series, RG 189, NA.

15. Dupree, p. 319; Willem Hackmann, *Seek and Strike: Sonar, Anti-Submarine Warfare, and the Royal Navy, 1914–54* (London: Her Majesty's Stationery Office, 1984); Bush, pp. 71ff.; and Marvin Lasky, "A Historical Review of Underwater Acoustic Technology 1916–1939 with Emphasis on Undersea Warfare," *U.S. Navy Journal of Underwater Acoustics*, October 1974, pp. 559–601.

16. The naval construction authorized by Congress in 1916 set out plans for ten battleships (32,000 tons, armed with eight 16-inch guns) and six battlecruisers (34,800 tons with 14-inch guns). In a second round of construction the Navy planned to build three more battleships; each would displace 42,000 tons and carry twelve 16-inch guns. The prospect of such naval power in American hands disturbed the British, French, and Japanese (George T. Davis, *A Navy Second to None: The Development of Modern American Naval Policy* [New York: Harcourt, Brace, 1940], pp. 230–1).

17. Davis, pp. 270ff.; and Robert Gordon Kaufman, *Arms Control in the Pre-Nuclear Era: The United States and Naval Limitation between the Two World Wars* (New York: Columbia Univ. Press, 1990). The agreed battleship ratio between Great Britain, the United States, Japan, France, and Italy was set at 5 : 5 : 3 : 1.75 : 1.75.

18. Hayes to Officer in Charge, Engineering Experiment Station, 19 February 1923, Navy 1924–1930, NAS—GOVT.: AG and Departments, NAS Archive.

19. Hydrography and oceanography are different. The former is closely related to physical oceanography, concentrating on physical conditions, boundaries, and currents. The latter is far more comprehensive and includes, among other things, the study of marine life, the physics and chemistry of the ocean, and the geology of the ocean bottom. In the U.S. Navy the function of the hydrographer was to incorporate physical oceanographic data in maps and sailing directions in order to improve navigation. Thus the naval commitment to oceanography addressed in this article represents a new and more comprehensive mission for the U.S. Navy Hydrographic Office.

20. Hayes to Officer in Charge, Engineering Experiment Station, 19 February 1923, Navy 1924–1930, NAS—GOVT.: AG and Departments, NAS Archive.

21. Annual Meeting, 21–22 April 1922, NRC, Division of Geology and Geography, NAS Archive.

22. Schlee, pp. 250–1; and Marc I. Pinsel, *150 Years of Service on the Seas: A Pictorial History of the U.S. Naval Oceanographic Office from 1830 to 1980*, vol. 1 (Washington, D.C.: Naval Oceanographic Office, 1981), pp. 110–1.

23. Halligan to Bureau of Engineering, 19 February 1923, Navy 1924–1930, NAS—GOVT.: AG and Departments, NAS Archive; and Hayes to Officer in Charge, Engineering Experiment Station, 19 February 1923, Navy 1924–1930, NAS—GOVT.: AG and Departments, NAS Archive.

24. Bassett to Denby, 14 March 1923; Bureau of Navigation to Secretary of the Navy [SecNav], 21 March 1923; Acting SecNav to Bureau of Navigation, 4 April 1923, Navy 1924–1930, NAS—GOVT.: AG and

Departments, NAS Archive. The Navy's Lieutenant Wilkes led the United States Exploring Expedition of 1838–1842.

25. Robert V. Bruce, *The Launching of Modern American Science, 1846–1876* (New York: Alfred Knopf, 1987), pp. 205ff.

26. Secretary of State to Denby, 22 January 1923; Davis to Denby, 30 April 1923, box 2431, SecNav Gencorr 1916–1926, RG 80, NA.

27. Fenneman to Denby, 30 April 1923, box 2431, SecNav Gencorr 1916–1926, RG 80, NA; Denby to Albert Barrows, secretary of the Division of Foreign Relations, NRC, 7 May 1923, Projects: Hydrographic Expedition—W.M. Davis, NRC: Foreign Relations: Committee on Pacific Investigations, 1923, NAS Archive.

28. Bassett to Asserson, 3 July 1923, box 2431, SecNav Gencorr 1916–1926, RG 80, NA.

29. Asserson to Chief of Naval Operations, 26 December 1923, box 2431, SecNav Gencorr 1916–1926, RG 80, NA. For general naval records on the Pan-Pacific Congress see file 253880, box 230, Gencorr 1907–1924, Naval Hydrographic Office, RG 37, NA.

30. Hobbs to Denby, 7 January 1924, Projects: Evaluation of Proposed Studies: Naval Oceanographic Expedition—W.H. Hobbs, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

31. Bassett to Gano Dunn, Chairman of the NRC Executive Board, 6 February 1924, and Dunn to Bassett, 9 February 1924, Projects: Evaluation of Proposed Studies: Naval Oceanographic Expedition—W.H. Hobbs, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

32. The Scripps Institution for Biological Research became the Scripps Institution of Oceanography, under Vaughan's direction, in October 1925. Barrows memorandum for the Members of the Committee on Pacific Investigations, 26 February 1924, Projects: Evaluation of Proposed Studies: Naval Oceanographic Expedition—W.H. Hobbs (Hobbs had neglected to inform the NRC of his proposed venture, thus Dunn, Barrows, and the committee members knew nothing of it before Bassett's communication), NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

33. Swingle to Barrows, 4 March 1924, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

34. Evermann to Barrows, 3 March 1924, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

35. Bowie to Barrows, 3 March 1924, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

36. The Hydrographic Office responded to Denby's request by soliciting opinions in forty different professional scientific and engineering societies. See William H. Hobbs, "A Proposed New 'Challenger' Exploring Expedition," *Science*, 7 March 1924, pp. 237-8, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive.

37. Memorandum for Hydrographic Office by Andrew C. Lawson, 17 March 1924; Research in Oceanography, Annual Meeting of the NRC, minutes, 26 April 1924, NRC Annual Meeting, 1924, NRC Division of Geology and Geography; Gregory (Chairman, Pacific Investigations Subcommittee) to Davis, 26 March 1924, Projects: Pacific Ocean Expeditions in Cooperation with the Navy Department, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive; Davis to Lawson, 29 February 1924, Navy 1924–1930, NAS—GOVT.: AG and Departments; and Andrew C. Lawson, "The Continental Shelf off the Coast of California," *Bulletin of the National Research Council*, April 1924, pp. 3-23, NAS Archive.

38. Ritter to Barrows, 4 March 1924; Merrill to Barrows, 3 March 1924; Evermann to Barrows, 3 March 1924; Barrows to Stejneger, 29 February 1924; Stejneger to Barrows, 27 February 1924; Swingle to Barrows, 4 March 1924; Vaughan to Barrows, 3 March 1924; Bowie to Barrows, 3 March 1924; Vaughan to Davis, 6 March 1924; Gregory to Barrows, 11 March 1924; Vaughan to Barrows, 26 March 1924; Dunn to Bassett, n.d. February 1924, NRC: Foreign Relations: Committee on Pacific Investigations, 1924, NAS Archive; and Vaughan to Barrows, 1 March 1924, Division of Geology and Geography, General Records, 1924–1925, NAS Archive.

39. Theodore Roosevelt, Jr., letter of the Secretary of the Navy inviting the conference, Navy Department, 2 June 1924, box 2432, SecNav Gencorr 1916–1926, RG 80, NA; and Report of the Conference on Oceanography, 1 July 1924; Bassett to SecNav, 6 October 1924, box 2432, SecNav Gencorr 1916–1926, RG 80, NA.

Ψ

Today's Officer Corps

A Repository of Virtue in an Anarchic World?

Joel H. Rosenthal

ALL ARMIES ARE EXPRESSIONS of the societies from which they arise. The purposes for which armies fight and the ways in which they do so reflect the values of the societies which send them to war in the first place.

But among the many lessons one learns from the masterful work of the military historian John Keegan is that armies and warriors have never been passive recipients of social values.[1] Indeed, as a profession and a cultural force of its own, today's military establishment is an active force in shaping and sustaining a set of values that is central to our modern political and social life. As the journalist Robert D. Kaplan points out, "Soldiers are becoming like doctors and lawyers—another professional group we'd like to need less of but upon which we rely more. . . . [F]oreign policy will over the decades become increasingly influenced by the military, because war, peacekeeping, famine relief and the like are becoming too complex for civilian managers."[2]

How is today's officer corps handling this age-old and increasingly important responsibility for setting standards? This brief essay offers one civilian's perspective on the challenges for military leaders concerned with moral leadership.

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The Professional Military

In his definitive book *The Soldier and the State*, Samuel Huntington established that the modern officer corps is in fact a professional organization.[3] Like the medical and legal professions, the military profession establishes, certifies, and maintains standards of competence and appropriate conduct for its members. These standards are not limited to technical matters: they must include ethical behavior as well. As Anthony Hartle and James Toner have pointed out in their excellent overviews of military ethics, one of the key characteristics of any profession—and especially the military profession—is that it "fosters a communal sense of shame and honor."[4] It is precisely this sense of duty and mission—providing guidance as to what is permissible and what is not, what is a heroic act and what is cowardly, foolish, or shameful—that elevates the military endeavor to the status of a profession.

The values that gain currency within the military are neither received like tablets of stone nor created out of thin air; rather, they are built on the wisdom of those who have preceded us and are forged out of the hard-won lessons of historical and personal experience. Truly professional military leaders engage in habitual and serious ethical reflection as a matter of course. To do one's job well, it is unavoidable.

By ethical reflection, I mean the process of moral reasoning by which decisions are made on right and good conduct. Ethical reasoning is the attempt to grapple with Socrates' question: how should one live? In the course of their careers, military leaders cannot avoid certain aspects of Socrates' question in relation to their work. The manner in which they respond to it inevitably reinforces Samuel Huntington's fundamental thesis regarding civil-military relations—that the military profession is, in essence, "a *moral* unit positing certain values and ideals which guide the members in their dealings with laymen."[5]

In a profession where duty, obligation, and responsibility weigh so heavily —and where life and death are at the core of activity—the imperative to engage in ethical reflection is hard to overstate. And in a profession where norms become so thoroughly routine and internalized, the stakes are considerable. But military professionals are not alone or without guidance in developing their ethical judgment. Beyond their own personal resources of religious and moral beliefs, officers have other resources unique to their profession and calling. Two of them are readily apparent: first, the "just war" tradition, which has been thoroughly absorbed into military doctrine ranging from ordinary rules and regulations to grand strategy and tactics; and second, the American constitutional tradition of civil-military relations, which aims at insuring that military

activity that is undertaken is commensurate with, and in the service of, democratic values.

The War Convention and Just War

Michael Walzer defines "the war convention" as "the set of norms, customs, professional codes, legal precepts, religious and philosophical principles, and reciprocal arrangements that shape our judgment of military conduct." Walzer explains that "though chivalry is dead . . . , professional soldiers remain sensitive (or some of them do) to the limits and restraints that distinguish their life's work from mere butchery."[6]

I would argue, although Walzer does not go this far, that the war convention —as ambiguous and evolving as it may be—is held in trust by military professionals themselves. While this may not be an exclusive trust, professional military officers are the war convention's guardians, consumers, and arbiters in the first instance. Because of this special standing in relation to the war convention, military officers have a duty to confront it head-on and to address it in a sustained and systematic way.

Walzer argues that war is a social creation, that for all its brutality war is still "a rule-governed activity." He calls war "a world of permissions and prohibitions—a moral world, therefore, in the midst of hell." Not surprisingly, the key actors in inventing codes of behavior in war are soldiers themselves. Whether it is World War I pilots devising protocols for their dogfights, or naval commanders dealing with the consequences of unrestricted submarine warfare with the advent of the U-boat, or infantrymen making provisions for the treatment of prisoners and noncombatants, the war convention has been a palpable presence throughout history.

At the heart of the war convention is the "just war tradition," which provides the essential organizing principles for military ethics. The tradition is divided into two discrete units: *jus ad bellum* (literally, the justice of war) and *jus in bello* (justice *in* war). While it is self-evident that military officers are most qualified to deal with *jus in bello* questions, I would argue that officers also have an important (although not determinant) role to play in addressing *jus ad bellum* issues.

Jus ad bellum issues center on "just cause": When is it just to resort to the use of force? The usual checklist includes the criteria that the use of force must be motivated by a right intention (say, a response to aggression) and that it be authorized by a competent authority. The use of force must also pass four prudential tests: "that it be expected to produce a preponderance of good over evil, that it have a reasonable hope of success, that it be a last resort, and that its expected outcome be peace."[7] *Jus ad bellum* questions are generally thought

to be more political than *jus in bello* matters, and this is probably so. Yet a careful consideration of these questions should lead one to conclude that military officers would have much to say about the criteria as outlined above—particularly when applied to specific situations. In short, I would argue that the military should not rule itself out of bounds in discussing *jus ad bellum* questions.

The officer corps, as an integral part of a democratic society, has a unique role to play in the debate over the justice of any given conflict. While it is not the role of the military to pass definitive judgment or even to influence *political* debate, the military should advise the civilian government on issues as clear as the manner and cost of conducting this war, "probability of success," "last resort," and even perhaps "legitimate authority." At a minimum, the officer corps, as a professional organization, should consider the issues to be now relevant.

For example, should the military, properly, take on unconventional new missions? James Toner mentions many that are now in play: "non-combatant evacuation, disaster relief, environmental clean-up, humanitarian intervention, education and training, infrastructure rebuilding, nation-building in the less-developed countries, medical relief, drug wars, border patrol, riot control, prison duty, arms control verification, and other such missions."[8] These are issues that can and should be discussed by the military establishment in light of the war convention and just war tradition. Are these just causes, and if so, is the military establishment as currently constituted the appropriate instrument to fulfill them?

The issue of competent authority, while primarily a political concern, is nevertheless an area that should receive explicit attention by the military. The trend in today's political environment is to engage in multilateral actions rather than unilateral endeavors. Is the idea of "competent authority" being co-opted into a preference for multilateral over unilateral action? Does this trend have any meaning for the military profession? What are its long-term implications?

Most military professionals will feel more at ease in discussing *jus in bello* questions, and rightly so, given their presumed expertise in and firsthand knowledge of waging war. *Jus in bello* requirements are simple to state, although difficult to apply: to be considered just, a use of force must be discriminate and proportionate. Perhaps among the most significant ethical issues military officers face today must be those associated with making recommendations for the selection of targets, estimating the magnitude of force to be used in certain situations, and balancing the idea of proportionality with (for lack of a better phrase) what one might call a willingness (or unwillingness) to take casualties.

It seems to me, as a civilian observer, that General Colin Powell's pronouncements while Chairman of the Joint Chiefs of Staff emphasizing "overwhelming force" raise some fundamental questions that have yet to be fully addressed. Is

there not some difficulty in reconciling this doctrine with the just war principle of proportionality? The purpose behind the Powell doctrine is clear and logical, but its adaptation and application to new and unpredictable kinds of conflicts are not self-evident.

Despite the stunning accuracy and firepower displayed in the 1991 Gulf war victory, targeting will continue to provide many ethical dilemmas for war planners and officers in the field. As the aftermath of the war illustrated, there are few if any "antiseptic" targets. Civilians—many of them a population's weakest members, its elderly and its very young—die when electric grids and other infrastructure targets are hit and a society is brought to its knees.

We also need to acknowledge that even when *direct* military force is not used, ethical issues remain. For example, as many analysts are now demonstrating, it is often the noncombatants who suffer most when sanctions (requiring, usually, military enforcement) are applied against an adversary, even when the noncombatants are not directly targeted.[9] Military officers, who will perform key roles in such manifestations of conflict or international intervention, also should be able to appraise, from a moral perspective, the consequences of their efforts.

A professional officers corps is concerned not only about completing missions but also about fighting well—fighting in conformance with standards that bring honor rather than shame. One challenge that has recently emerged on this front in the international political arena is the use of land mines. It seems to me that the United States military establishment ought not to continue to insist on the utility of these weapons, particularly in light of their indiscriminate use by others over the past thirty years. While American forces may have used these weapons strictly in accordance with international conventions, the unfortunate reality is that most other belligerents have not, and land mines continue to injure and kill countless civilians the world over, some times years after a local war has ended. This appears to be a situation where military professionals have to weigh specific weapons capabilities in the full context of general principles and overall consequences; this is what an officer's moral reasoning, at its best, is all about.

In addition to proper targeting of the enemy and using force with appropriate restraint, military planners must also constantly bear in mind the protection of their own forces. It is hard to argue with what a military officer corps does, with unmitigated zeal and pride, to protect its men and women. But as Thomas Friedman has noted in the *New York Times*, not every nation shares the current American view on casualties. Friedman contrasts the very different responses of the French and the Americans to losses of recent years.[10] The French press and public reacted rather calmly and matter-of-factly to the tragic loss of French peacekeepers to snipers in Bosnia; the story was buried in the back pages of the newspapers and did not create much of a political storm, thereby allowing that

peacekeeping mission to continue. American experience has been quite different. Losses in Somalia and the celebration of the return of a downed American pilot after his escape from Bosnia highlight the different operating principles of the French and American publics, as well as of their presses and political establishments. How does one calculate "acceptable" losses for a professional army?[11] What is the duty, especially of senior uniformed leaders, to articulate, to their own troops and to the public they serve, a morally responsible view of risk and costs?

Also, a new set of issues for the twenty-first century and beyond is now beginning to face strategists and planners—the so-called Revolution in Military Affairs, or RMA. While not yet reduced to a set of concrete developments, the RMA is symbolic of a radically different era in military affairs. It is an era in which battlefield boundaries will become increasingly blurred, real-time intelligence will become more important, and improvements in target acquisition will be accompanied by deeper ambiguity in target selection. Threats are changing as well. The specter of terrorists with nuclear weapons, computer hackers with access to sensitive financial markets, and well armed drug traffickers with multinational bases is not far-fetched. How will these new technological developments and these new threats be handled in terms of *jus ad bellum* and *jus in bello*? It is probably not too early to start thinking about these issues in a serious, sustained, and philosophically sophisticated way.

American Values

In his book on military leadership, *Mask of Command*, John Keegan argues that it is now time for "post-heroic" leadership. By this he does not mean to attack the virtue of courage. Rather, Keegan believes that what is needed today is military leaders who act only after clear, analytical thought. The romance of Alexander the Great, the nobility of Wellington, and the populism of U.S. Grant were all reflective of their times. Today the premium is on rational reflection, ability to correlate ends and means, and on willingness to make decisions that are commensurate with the values being defended. The conversation over ethics and warfare in the twenty-first century should be led by the military establishment itself. The American officer corps is the trustee of its own high standards of expertise and honor, and it should actively work toward adapting those standards to new threats and challenges. As John Keegan himself attests, no one can match the experience, authority, and authenticity that the officer corps brings to the task.

Robert W. McElroy, in his thought-provoking book *Morality and U.S. Foreign Policy*, speculates on the ways in which moral norms make their way from ideas to actual foreign policy decisions.[12] McElroy posits three paths. First,

conscience plays a self-evident and fundamental role in the decision-making process, whether the question is one of relief assistance for famine victims or the use of force to repel aggression. Second, the influence of domestic political pressure is also considerable; in some cases (for instance, banning gas or chemical weapons) it can make a moral difference. Third, the realities of reciprocity (such as diplomatic immunity) in the international system dictate, or at least strongly influence, decisions to recognize certain restraints. Reciprocity is an essential element of the war convention, and it is an operative influence in maintaining compliance to such agreements as the Geneva Protocols.

I am convinced that the officer corps is itself a vehicle for the movement of moral norms into the policy-making process. Because of its essential role in transforming ideas into action, and because of its history, expertise, and stature in public service, the officer corps must consider some of the questions raised above, and do so in a sustained fashion within the professional military educational establishment. This is not to suggest a usurpation of civilian authority but rather an enhancement of it, by engendering a vigorous military voice—as one among the many existing within a democratic society that seeks peace with justice.

As in other professions, ethical reflection within the military is not done in solitude; it is institutionalized within the guild. To its credit, the American military establishment has made some provision for this kind of work within the professional military education system. Aspects of the war-ethics-leadership relation are raised in such venues as the war colleges and service academies, often with great success.

If there is any danger in the way ethical reflection is institutionalized within the guild, I believe that it lies in the lack of a systematic, coherent, and coordinated structure to support that effort over time and across services. Moral and ethical education cannot be reduced to single courses of study given here or there. Rather it must comprise a program of life-long learning, beginning in the training of officer-candidates and in the service academies and continuing according to a logical plan through mid and upper-level ranks at the war colleges and command-training schools.

Perhaps there should even be a formal role for retired officers in this process. It is no coincidence that in recent months two of the most controversial and compelling cases of ethical reasoning about difficult issues have originated from retired officers. Who better to raise these issues than those who have borne the responsibility of command? The proposal to end the use of land mines (advocated by General H. Norman Schwarzkopf, among others) and the call to eliminate the nation's dependence on nuclear weaponry (by Generals George Lee Butler, Andrew Goodpaster, and many other high-ranking officers) raise cutting-edge issues—each cries out for even further professional discussion

combining ethical reflection with firsthand military experience. While any proposal must be debated on its own merits, it is hard to question the qualifications or patriotism of the officers who have put forward these proposals.

I would not go so far as James Toner, who sees the military "code and spirit" as "a well from which our ethically beleaguered country may draw moral refreshment."[13] I think this asks too much of a single profession—and one with a special mission at that. But I do agree to a certain extent with the man he quotes, Sir John Hackett, who argues that "military institutions form a repository of moral resource that should always be a strength within a state."[14] That repository needs to address the pressing moral questions facing the military itself today. In so doing, the military establishment will fulfill its role as a unique and noble public institution, helping to make life better for the people its members serve.

Notes

1. John Keegan, *The Mask of Command* (New York: Penguin, 1987).

2. Robert D. Kaplan, "Fort Leavenworth and the Eclipse of Sovereignty," *The Atlantic Monthly*, September 1996, pp. 75–90.

3. Samuel P. Huntington, *The Soldier and the State* (Cambridge, Mass.: Harvard Univ. Press, 1957).

4. James H. Toner, *True Faith and Allegiance: The Burden of Military Ethics* (Lexington, Ky.: Univ. of Kentucky Press, 1995), pp. 120–1.

5. Huntington, pp. 9–10.

6. Michael Walzer, *Just and Unjust Wars* (New York: Basic Books, 1992), pp. 44–5.

7. James Turner Johnson, "The Concept of Just Cause," unpublished manuscript, January 1996.

8. Toner, p. 126.

9. See for example, Albert C. Pierce, "Just War Principles and Economic Sanctions," *Ethics & International Affairs*, vol. 10, 1996, pp. 99–113.

10. Thomas Friedman, "The No Dead War," *New York Times*, 23 August 1995, p. A21.

11. See Ralph Peters et al., "Values, Assumptions, and Policies," *Parameters*, Summer 1996.

12. Robert W. McElroy, *Morality and U.S. Foreign Policy* (Princeton, N.J.: Princeton Univ. Press, 1992).

13. Toner, p. 3.

14. Quoted in Toner, p. 20.

Ψ

IN MY VIEW . . .

"Theater Ballistic Missile Defense"

Sir:

Lieutenant Commander Swicker writes extremely well, his logic is sound, and his argument demonstrates a sound grasp of a broad range of complex, interdependent issues. His original study for the Naval War College is a superb examination of the subject, particularly for his thought-provoking discussion of rules of engagement, and command and control, for active defense operations in theater ballistic missile defense (TBMD). This article is another superb piece of work, but several of the author's omissions bypass important responsibilities of the joint force maritime component commander (JFMCC). My comments largely serve to reinforce the author's main ideas, however; they do not take issue with his conclusions.

This article is a first-rate discussion of Navy active defense from the sea, a very important part of TBMD but also central to the larger mission of theater air defense. The article discusses the complex relationships involved in active defense but downplays the larger context of theater air defense. His discussions of loadout planning and firing doctrine, particularly for the SM-2 Block IVA (the Navy area defense weapon), become even more important in light of the requirements made on SM-2 Block IVA for defense against cruise missiles and piloted aircraft. As the range of the SM-2 increases, its role in the joint battlespace will increase, adding a requirement for sea-based air defense of forces ashore. Since the Marines are placing increasing emphasis on sea-based air defenses as a central part of their future tactics, the SM-2 Block IVA inventory will be vital

to ship-to-objective maneuver. The Marines will not have area defense weapons to accompany them ashore in the future; they are trading their organic area air defense artillery for increased mobility and additional logistic capacity. Given the Marine commitment to fully navalizing air defense, including adoption of the Cooperative Engagement Capability (CEC), demands on the sea-based supply of theater-wide and area defense weapons will sharply escalate.

Commander Swicker writes of "a smooth transition of the TBMD fight from protection of strategically significant areas to flexible maneuver," but in fact the TBMD fight doesn't transition: active defense coverage will adapt to the arrival of reinforcements, permitting Navy ships to increase their level of protection for Marine maneuver forces ashore as non-Navy forces assume responsibility for rear area assets. From the start, flexible maneuver will characterize naval operations throughout ship-to-objective maneuver. It isn't a phase. What can be threatened by the enemy doesn't transition, but the assignments given to Navy ships may.

His true focus is on command of active defense against ballistic missiles armed with weapons of mass destruction (WMD). By themselves, ballistic missiles are no more decisive than most other weapons, though their extreme speed and long range make them a very difficult tactical problem. Without WMD, however, the decisive factor becomes one of relative precision in targeting capability and missile guidance. Speed and range amount to very little without accuracy and precision, in targeting information and in the weapon system. This brings us back to the larger context of theater air defense, for cruise missiles can be armed with WMD as easily as ballistic missiles and may be harder to detect and engage early in their flight. This emphasizes the naval capability for networked air defense, linking individual units together via CEC and the Joint Tactical Information Display System (JTIDS) to enhance force-wide situational awareness, decision support, and engagement.

The pressure to use Navy theater-wide capability for ascent phase interception will be overwhelming. Not only can a small number of ships protect large areas, but ascent phase interception also destroys or neutralizes the missile prior to deployment of penetration aids and decoys, the technology for which is as certain to proliferate as earlier sophisticated technologies did. Relatively simple decoy and countermeasure technologies are likely to be deployed by some of our potential enemies in the coming decade, creating confusion and losing time for target discrimination during mid-course and terminal area engagements. In the worst cases, the wrong target may be engaged, wasting interceptors and possibly allowing one or more WMD warheads to leak through to their targets.

Cruisers likely will be the preferred ships for forward interception stations, given their larger magazine capacity and longer endurance, but also because Aegis cruisers embark as many as two LAMPS helicopters, strengthening their

ability to stand and fight against surface ships and submarines, a principal concern for exposed ships in forward stations. (The submarine problem haunts ships in area defense stations as well, pinned as they are to predictable patrol areas limited by engagement geometry.)

The JFMCC's perspective on ballistic missile defense from the sea includes attack operations by naval aviation, naval fires, and special operations–capable forces. Whether they produce launcher kills or not, naval aircraft will be dedicated to attack operations against ballistic missiles and their supporting infrastructure. At the very least, they will complicate and disrupt enemy launch operations. While there is no substitute for a target kill prior to launch, attack operations are still successful if the perceived or actual presence of strike fighters or special operations forces in the vicinity prevents, interrupts, or delays ballistic missile launch activity. Attack operations may break up the timing and execution of coordinated ballistic missile raids, easing the tactical problem for active defense forces. Any kills prior to launch also help to conserve interceptors. Perceived danger to launch operations, launch assets, and launcher crews may restrict the enemy's ballistic missile operations to the cover of night and low-visibility weather, as during Operation Desert Storm, buying at least some periods which are relatively free from the threat.

Strike aircraft or surveillance assets may be able to trace launcher crews back to their reloading and rearming facilities, leading to destruction of those assets by deliberate strike operations. Even if the JFMCC perceives no value to attack operations at all, the political demand to "do something" will guarantee that naval aviation and special operations forces devote a meaningful degree of effort to attack operations.

Finally, the JFMCC must plan and incorporate passive defense measures into TBMD operations, sometimes with a detrimental impact on operational or tactical effectiveness. The JFMCC's operations include measures to prevent ballistic missile raids, protective measures to minimize the effects of raids on the force and protected assets, and recovery measures to reconstitute the force and continue operations after raids. In addition to cueing the active defense forces, the detection and warning networks will promptly alert military and civil defense authorities to ballistic missile raids for timely adoption of protective measures. The magnified importance of passive defense in the face of WMD is proven by the operational restrictions imposed by protection and decontamination measures for nuclear, biological, and chemical attack. The Navy has never had to take these as close to its heart as the other services have, but the JFMCC will not be able to avoid the responsibility, particularly when naval forces are the vanguard of the U.S. response.

All that said, I hope that Lieutenant Commander Swicker will be available when the Naval Doctrine Command designates the Primary Review Authority

(PRA) and issues the program directive for the first TBMD doctrine. In the course of my work on theater air and missile defense issues at the Naval Doctrine Command, I have not come across another officer in any service who has demonstrated so sound a grasp of an equivalent range of strategic, operational, and tactical issues attendant to active defense against ballistic missiles.

<div style="text-align: right;">

Bill Bishop
Consulting Analyst
Science Applications International Corp.
Virginia Beach, Va.

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"The Case of General Dostler"

Sir:

May I add the name of German General Anton Dostler, whose ghost has haunted me these many years, to Leslie C. Green's list of high-ranking enemy military officers tried as war criminals after the end of World War II? (See "War Crimes, Crimes against Humanity, and Command Responsibility," *Naval War College Review*, Spring 1997.) General Dostler, commander of the LXXV Army Corps in northern Italy, was tried in the fall of 1945 by an American military commission on charges of violating the laws of war, in this case ordering the shooting of fifteen unarmed American prisoners captured while attempting to land on enemy territory near La Spezia, at that time under German control. Despite his plea of following orders of a superior, the general was found guilty and sentenced to death "by musketry."

I first heard Dostler's name from two enlisted men, writers for the military newspaper *Stars and Stripes*, while traveling (very slowly) by rail from Milan to Naples in October 1945. As the train wound its way southward through the shattered countryside, we fell into conversation during which the two writers told me that they were traveling to Aversa, where a military court was trying a German general for war crimes. Before getting off at Aversa they invited me to come along with them, assuring me that there would be no difficulty in my attending the trial. I declined, telling them I was overdue from leave at my duty station in Naples but that I would read their press stories on the trial.

Specifically, General Dostler was charged with the shooting of fifteen American army personnel (two officers and thirteen enlisted men) who were trying to carry out a secret OSS mission by landing near La Spezia on the Italian coast in a boat specially designed for the operation by the U.S. Navy. They were captured almost immediately by the Germans and were shot two days later on direct orders from the commanding general. At his trial Dostler pleaded

innocent on the ground that he was obeying orders of officers superior to him, of whom the highest was Adolf Hitler; he, like all army officers, was sworn to absolute obedience to the Führer's commands. The order in question was the notorious *Führerbefehl*, which included *inter alia* the specification that enemy personnel engaged in sabotage or so-called commando operations were to be shot immediately after interrogation, whether or not they wore identifying military badges on their clothing.

After their capture the American soldiers had been sent to the headquarters of the 135th Fortress Brigade at La Spezia for interrogation by two German naval intelligence officers. Neither they nor their superior, Colonel Almers, had much stomach for giving the go-ahead signal to General Dostler—as Dostler required them to do. Almost immediately a dispatch came back: the American prisoners should be shot *sofort* (immediately).

One reason for Dostler's haste in obeying his higher-ups so promptly may have been the proximity of the Nazi SS killing organs, the Sicherheitsdienst, who were empowered to take over the interrogation and shooting of the American prisoners. Dostler evaded their attentions and ordered his captives shot at once. Despite attempts on the part of Colonel Almers and the two German naval interrogators to hold off the executions, Dostler's order was carried out on the morning of 26 March 1944.

At his trial more than a year later, General Dostler stated that he himself had canceled his order to shoot the prisoners but that renewed pressure from higher authorities caused him to reinstate his original order.

General Dostler was executed at Aversa on the morning of 1 December 1945. According to newsmen covering the trial, Dostler died bravely. He heard, solemnly read out, the names of the fifteen Americans who died at his orders. His last words as he was tied to the stake were "*Es lebe Deutschland!*" ("Long live Germany!"), followed by a whispered, "I give my life to my country and my soul to God."

J. G. Brennan
Stony Brook, N.Y.

Professor Green replies:

After World War II many senior Axis officers were tried for a variety of war crimes which they had ordered their troops to commit, or had failed to prevent. I only discussed those which dealt with major issues in the law of war or that developed the rules concerning command responsibility. There is nothing in the report of the Dostler case which was of this character.

As to the plea of compliance with the *Führerbefehl*, this "reliance" on the defense of superior order is chosen by every such accused, particularly when the person issuing the order is dead and cannot himself be brought to trial.

However, there is no way in which this defence could have assisted Dostler. Paragraph 4 of the *Führerbefehl* specifically stated, of any commando or saboteur captured, other than one killed in action: "It is formally forbidden to keep [them], even temporarily, under military supervision (for example, in Prisoner of War camps, etc.)." Instead, they were to be handed over without delay to the Sicherheitsdienst.

The American personnel for whose death he was prosecuted were captured virtually on landing and were shot some forty-five hours later. Clearly, therefore, Dostler was not complying with the order which he claimed was binding upon him, and he went beyond what he was ordered to do. Moreover, General von Saenger, called for the defense, testified that he "did not know a case in the German Army in which a general officer had been executed for disobeying the *Führerbefehl.*"

Witnesses, including some called for the defense, pointed out that the Americans had in fact been dressed as soldiers and could not, therefore, be treated as spies. By the law of war, spies operate in plain clothes behind enemy lines—and these men did not. Further, by that law even spies must be given a fair trial and cannot be executed summarily. In this case there was no trial. Such a trial would in fact have been illegal, since they were entitled to treatment as prisoners of war under the 1929 Geneva Convention. This specifically forbids any action against prisoners of war by way of reprisal, one of the contentions put forward by the defense—and one of the grounds on which the *Führerbefehl* claimed to be based.

Finally, I might point out in regard to the defense of superior orders in general, that in 1923, in the *Llandovery Castle* case, the German Landsgericht, sitting at Leipzig, clearly established the principle that an order to commit a "manifestly unlawful" act could never be pleaded in defense. And this rule has been followed ever since.

There can be no doubt that an officer of General Dostler's rank and experience knew that it could never be lawful to order the summary execution of prisoners of war.

In view of these facts, I would suggest that Dr. Brennan may now with a clear conscience put his "ghosts" concerning Dostler to rest.

L. C. Green
Naval War College

Ψ

SET AND DRIFT

In Retrospect
The Employment of Antiship Missiles

Lieutenant Commander Asen N. Kojukharov, Bulgarian Navy

AMBUSH AT SEA AS A CONCEPT has a great deal to do nowadays with the first successful employment of antiship missiles in 1967. A closer look at history shows that this relationship is not coincidental but rather a phenomenon that developed along with the methods of naval warfare used by light forces. Although thirty years have passed since that memorable event, it is still of great interest today, which is why the world press is giving due attention to the date that marks the onset of missile deployment in naval operations.

By the early 1960s the Soviet military industry had not only armed its own navy with missile–carrying vessels but had begun exporting the new weapon to "friendly" states, which then included the United Arab Republic (a short-lived formation comprising Egypt, Syria, and, for an even shorter period

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of time, Yemen). However, the new weapon was inadequately dealt with by the Arabs, because of, first, their chronic difficulties with its operation and employment, and second, their doubts about its efficiency. The Arabs had such a deep psychological barrier regarding the reliability of this weapon in combat that when any mistake occurred during maneuvers the offender was severely dealt with. Another contributing factor may have been that since the 1950s antiship missile trials had been carried out in many countries, yet then, a decade later, only Sweden and the Soviet Union were producing ships with antiship missiles; other countries remained reluctant.[1]

To a large extent this explains why no missiles were fired during an early engagement between Arab missile boats and Israeli torpedo boats and destroyers during the Six Day War. On the night of 5 June 1967, off Port Said, an Israeli task force consisting of the destroyer *Jaffa* and three torpedo boats supported a group of divers trying to penetrate the Port Said naval base. The frogmen were unpleasantly surprised to find not a single target either in the harbor area or at the base areas. Because events had happened so quickly, Israeli intelligence had failed to learn of the redisposition of Egypt's navy to Alexandria after a heavy defeat by Israeli aviation. However, Israeli support ships did locate two Egyptian picket-patrol missile boats trying to escape to Alexandria at full speed. In spite of several direct hits, the Egyptians finally succeeded in breaking away from their pursuers.

Indeed, before the battle the Israeli squadron commander had been informed that he might encounter missile boats in the vicinity.[2] However, the message was considered to be only general information and contained no express warning to avoid an encounter with those boats. On the contrary, the Israelis were intent on fighting the Arab forces—which clearly shows how much the antiship missile was underestimated.

Another engagement relevant to this situation took place six days later, on the night of 12 June. The Israeli destroyer *Eilat*, escorted by two Saar-1 type torpedo boats (Italian craft armed with 457 mm torpedo tubes and 20 mm guns), was conducting a patrol northeast of Port Said along the newly occupied shore of the Sinai peninsula, when its radar detected a target that the ship identified as an Egyptian missile boat. The Israeli ship abruptly changed course to approach more closely.[3] Meanwhile, the Israeli commander ordered his high-speed escorts to engage the enemy. But when they drew closer, the Israelis realized that their target was not a missile boat but a group of torpedo boats (Soviet-built P-6s, with a displacement of 75 tons, a speed of 43 knots, 25-man crews, 450 mm torpedo tubes, and an antiaircraft gun) that were approaching head-on. The Egyptians managed to avoid fighting by making for the harbor of Port Said, where they were protected by coastal and field artillery.

However, the large Israeli destroyer was a tempting target, and the two escorts were now out of sight. So, without knowing the real composition of the enemy, the Egyptian commander made the decision to get close to the destroyer. Leaving their ambush position in the radar shadow of Port Said, the Egyptians believed they were delivering a surprise attack as they gathered speed eastward. They apparently were the source of a torpedo attack that was then evaded by *Eilat*'s rapid maneuvering. The Egyptian forces also may not have suspected that another force of Israeli boats was on their starboard side. The Israelis, creeping along the coast of Tina Bay, had succeeded in fooling the enemy, using the destroyer as a decoy, drawing the Egyptians away from their position along the coast, and trapping them in an ambush. At the beginning of the attack, however, the Israeli patrol was in the dark as well: it was unaware that the Egyptians had separated the *Eilat* from its escort, thus complicating the engagement. When the Israelis maneuvered to join *Eilat*, the Egyptians started shooting. The Israelis returned fire immediately despite the risk of reciprocal fire. Soon an Egyptian boat was hit; it proceeded eastward with its stern ablaze, apparently out of control, while the other turned west.[4] *Eilat*'s commanding officer ordered the patrol to destroy the "eastern target" while he fought the "western target." The battle lasted more than thirty minutes. The disabled Arab boat was slow to sink; the destroyer's escort had to circle the target and shoot at the burning wreck until it was submerged. Meanwhile, *Eilat* fired a salvo at the other target, heading west, and blew it up. The Israelis carried out an extensive search and rescue operation but found no survivors[5].

The loss of these boats clearly demonstrates the inability of the Egyptian naval forces to keep a proper lookout in the base responsibility zone, locate the whole enemy force, and then strike a blow with sufficient strength and weaponry to accomplish the task. The commander of the Egyptian task force impetuously launched a torpedo attack at the start of the battle only to lose the initiative shortly thereafter. The Israeli crews showed combat readiness and tactical experience, although in the initial stages their maneuvering was not optimal for the situation.

But apart from the ineffectual Egyptian ambush and the brilliant Israeli counter-ambush, there is another aspect to these events that no one took into account. Both battles of 5 June and 12 June exposed the attitude toward—in fact, the disregard for—antiship missiles on the part of Israeli headquarters and commanding officers. It was imprudent of them to send large combatant ships with poor antiaircraft armament to a region where missile-carrying boats were likely to operate. They were later severely punished for their poor judgment. The 12 June episode became a prelude to another, far more important, event, which decades later is still topical and merits consideration.
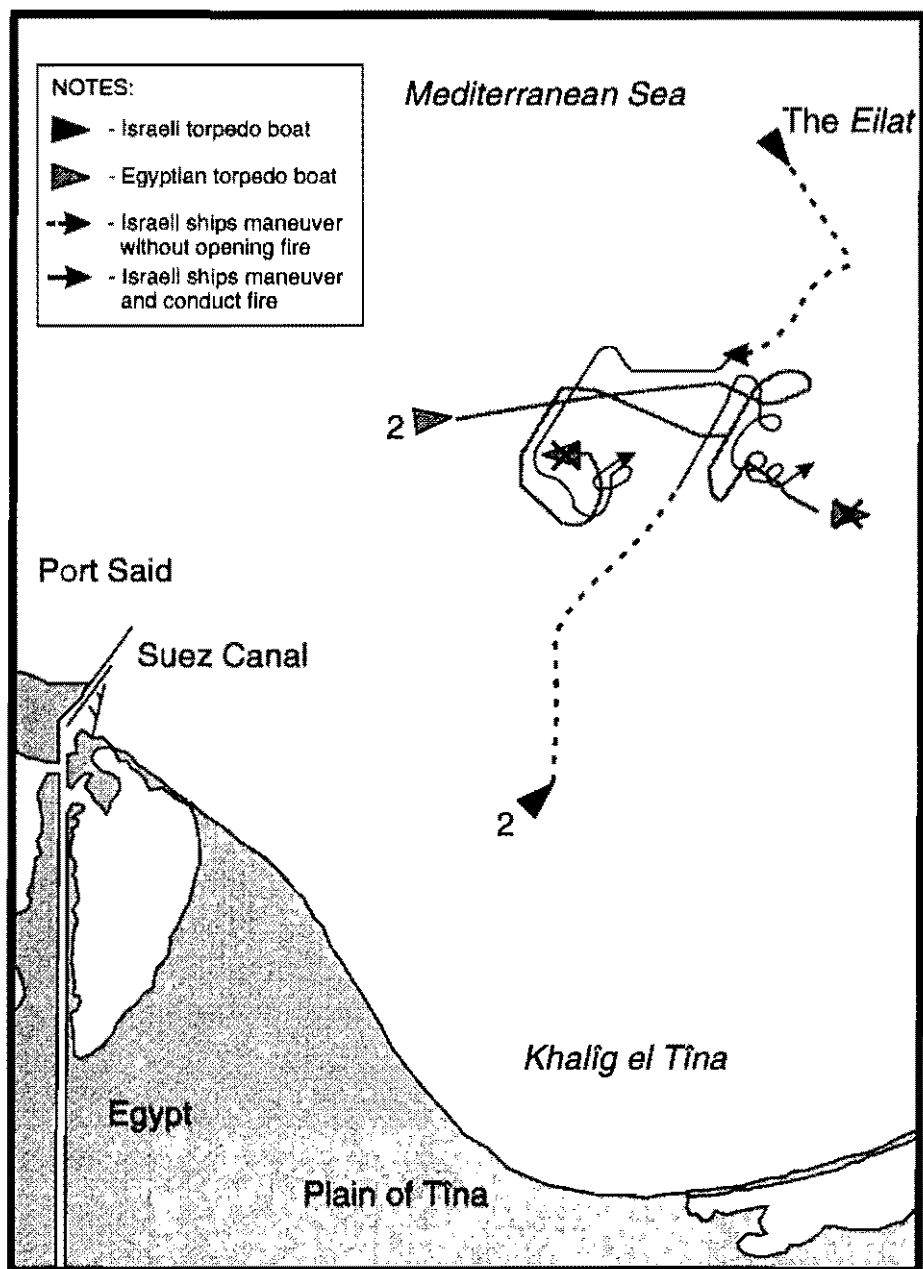
The Torpedo Boat Battle on 12 June 1967

NOTES:

▶ - Israeli torpedo boat

▷ - Egyptian torpedo boat

--▶ - Israeli ships maneuver without opening fire

—▶ - Israeli ships maneuver and conduct fire

Mediterranean Sea

The *Eilat*

Port Said

Suez Canal

Khalîg el Tîna

Egypt

Plain of Tina

Joseph R. Nunes, Jr.

The end of the Six Day War and the annexation of the occupied territories did not settle the conflict between Israel and the Arab countries. To the contrary, armed skirmishes continued along the Arab–Israeli border, in the so-called War of Attrition. There were battles at sea as well, one of which marked a global turning point for future naval warfare.

On 21 October 1967, two Arab boats sank *Eilat* with four Styx missiles in Tina Bay, thirteen miles off Port Said. At nightfall, an Egyptian radar station had detected a single ship proceeding along the coast of the Sinai peninsula—it was the *Eilat*. Its commanding officer, Commander Itshak Shoshan, feared only enemy submarines, so he conducted only antisubmarine zigzag maneuvers. He even ignored the two small Komar missile boats (a 183P design, armed with two launchers for Soviet Styx missiles) that were on patrol. (He had destroyed a P-6 under similar circumstances at nearly the same position; the two small targets now visible on *Eilat*'s radar screen did not differ from those he had sunk on 12 June.) At 1700 the destroyer assumed a steady course. Sixteen minutes later, a signalman reported bright bursts and curls of smoke in the direction of Port Said. Then the trace of a launched missile could been seen in the sky. The *Eilat* was put on full alert and turned to resume its zigzag. Its navigator at first reported that the missile would fly past and clear the stern, but then, at a range of six miles, the missile veered toward the destroyer; apparently at that instant it engaged its homing warhead.[6] The *Eilat* immediately opened fire on the missile as it closed in, but in vain. Minutes after the first hit on the stern, a second missile struck amidships.[7]

In spite of the measures taken by the crew to save the ship, it lost way and began to sink, with a noticeable list. Within two hours a third missile struck the destroyer, detonating its ammunition magazines.[8] The last message from the *Eilat* was transmitted at 5:28 P.M., picked up by an Israeli combat unit on the Sinai peninsula. Commander Shoshan ordered the crew to abandon ship.[9] The destroyer was still visible on the Egyptian radar screens. The last missile was launched from a minimum distance of safety. It fell on the derelict, spilling fuel and oxidizer. The *Eilat* sank. A twenty-hour search and rescue operation was carried out by the Israeli Coast Guard. From the crew of 199, forty-seven perished, and ninety-one were hurt or suffered severe burns.[10]

The sinking of the *Eilat* was the first successful employment of antiship missiles. The event received wide discussion in the world naval press. Many (including Soviet writers) tried to point out that the *first* antiship missile attack had been on 9 September 1943, when German Dornier 217 bombers sank the new Italian battleship *Roma*, using a homing bomb, an FX 1400.[11] It is true that the Germans also employed an antiship missile, the H 293, but it was ineffective because of its insufficient tactical and technical characteristics.[12]

Many authors have attempted to explain why the *Eilat* was lost. They point to a number of factors. First, the *Eilat* was an old destroyer (built in 1944) that lacked modern antiaircraft armament. The Israeli navy soon decommissioned its remaining destroyers, the last in 1969. (It is true that in 1968 Israel decommissioned its destroyer *Haifa*, but it was only in April 1969 that its last destroyer, *Jaffa*, was sunk by two missiles as a target during testing of the Israeli Gabriel missile.) Also, on the eve of the attack *Eilat*'s normal combat readiness was reduced because of the ship's celebration of the twelfth anniversary of its commissioning into the Israeli navy. Also, whereas a normal crew consisted of 250, the ship carried a complement of 199 as it proceeded on its last patrol (20 percent less than normal). Fourth, the small Egyptian boats shot from a sheltered bay, a fact which, to a large extent, increased their firing efficiency. Further, the *Eilat* was patrolling in one area at cruising speed, which allowed the Egyptian missile crews to prepare properly for the attack and conduct it in close to firing-range conditions. Finally, the attack was a complete surprise to the Israelis, because they failed to identify the boats as carrying missiles. Thus an unsuspecting *Eilat* proved crucial for a successful attack.

We may also add the fact that *Eilat* was sufficiently large to be an excellent target for the Soviet Styx missile, designed for such targets. Also, the ship took neither active nor passive countermeasures against these missiles, which were vulnerable to either. It was on patrol without an escort, which made it impossible to apply the well mastered methods of counter-ambush to obstruct the Egyptian picket patrol (as in the case on 12 June 1967), allowing the Egyptians to attack undisturbed. On the other hand, the innovative aspect of the 21 October ambush was that it achieved tactical surprise by deploying a brand new weapon, which allowed Egyptian missile boats, masked as torpedo boats, to feel secure enough to fire at ease.

Ambush is one of the most attractive methods of warfare, especially for the weaker of the two sides in conflict. However, it must be noted that the 1967 attack was to be the only successful ambush conducted by warships carrying antiship missiles against large men-of-war in the last thirty years. In the 1980s, fast attack craft employing similar methods failed, and even sustained heavy damage. Therefore, the Israeli navy was not the only one to learn the bitter lessons taught at Tina Bay.

The destruction of the destroyer *Eilat* was unique in yet another respect: it involved consecutive launches of single missiles with long intervals between—proof that the ship had carried poor antiaircraft defences. (A similar case was the minesweeper *Yarmuk*, sunk in 1973 during the Latakia engagement, but that Syrian vessel sank as a result of both missile hits and subsequent gunfire.)

After the successful attack that sank the *Eilat*, antiship missiles finally acquired a secure place (and due respect) in naval warfare. In spite of the views of certain

experts, navies around the world embarked on rearmament with the new missile. A new kind of air threat had been created, and the character of naval warfare was radically changed forever. This is the result of that engagement on 21 October 1967.

Notes

1. B. Kolchanov, "The Main Weapon of the Mosquito Fleet: Missiles," *Modelist-Konstruktor*, no. 1, 1989, pp. 31–2.

2. L. Williams, *The Israeli Defense Forces: A People's Army* (Tel Aviv: Ministry of Defense Printing House, 1989), p. 263.

3. Ibid., p. 264.

4. Ibid., p. 265. See also A. Kojukharov, "The War of Attrition: Some Naval Aspects of the Arab-Israeli Armed Conflict, 1967–1970," *Morskoi shornik*, no. 8, 1996, pp. 76–80.

5. Williams, p. 265.

6. V. Dotsenko, *Sunk: Combat Damage to Warships since 1945* (St. Petersburg: Deva, 1992), p. 45.

7. G. Smirnov, "Powerful Weapons for Small Ships," *Modelist-Konstruktor*, no. 7, 1988, pp. 31–2.

8. See Kojukharov, p. 77.

9. Dotsenko, p. 45.

10. Williams, p. 265.

11. S. Roskill, *The War at Sea*, vol. 3 (London: Collins 1962; reprint [as *Flot i voina*] Moscow: Military Publishers, 1974), vol. 3, pp. 170, 175 (reprint).

12. B. Rodionov and N. Novichkov, *Cruise Missiles in Naval Warfare* (Moscow: Military Publishers, 1987), p. 12; Roskill, vol. 3, p. 170 (reprint).

Ψ

Marines and Others: The Paintings of Colonel Charles Waterhouse USMCR, Ret. **Edison, N.J.: Sea Bag Productions, 1994. 280pp. (No price given)**
Charles Waterhouse has a decades-long love affair with the U.S. Marine Corps, and plainly it has been reciprocated. His first exposure was enlisted service in the 5th Marine Division from 1943 to 1946, during which he was wounded on Iwo Jima (an event pictured on page 188). In April 1972 he became a Marine Corps artist in residence and was awarded a reserve commission (originally as a major) and the first of several historical projects. Over the next eighteen years he portrayed Marines in all the Corps' wars and phases, sketching and painting with both obvious affection and care for detail. (He also painted for a variety of other clients—the "Others" of the subtitle.) This volume collects samples of all this work, with the artist's recollections and comments. If some of his paintings (especially the historical ones) seem relentlessly cheerful, even wide-eyed, it only befits an artist who had had what he calls a "Norman Rockwell" childhood. But he was "there" (including Vietnam, where he not only had to dig his own foxholes but debit per diem to sleep in them), and many of his images are as grim as they could well be. If you're a Marine, ever were, or ever wished you had been, you should *already* own this book.

A Case for Maneuverability

Rear Admiral Yedidia "Didi" Ya'ari, Israel Navy

B RITISH NAVAL HISTORIAN JULIAN S. CORBETT was the first to point out, almost a century ago, a disturbing phenomenon concerning the future of the surface fleet: "The vital, most difficult, and most absorbing problem has become not how to increase the power of a battle-fleet for attack, which is a comparatively simple matter, but how to defend it. "[1]

Corbett was referring to the newly developing threat of attack by flotillas of torpedo boats protecting their home waters. Obviously, some quite efficient answers were given to his concern as the century evolved. However, in the past few decades similar warnings have once again been voiced, this time regarding the introduction into the maritime arena of the guided missile. As with Corbett's torpedo boats, the issue is a particular constraint imposed by a newly developing threat to surface fleets in littoral waters.[2] Again like Corbett, this essay will argue that the primary answer to the problem is to enhance maneuverability, as—if in a somewhat different way than—Sir Julian had in mind in 1911.

The New Kid on the Block

On the face of it, we have here simply the old problem of maintaining the fundamental balance between threats and responses—a problem as old as threats and responses themselves. For instance, surface ships found means to limit Corbett's torpedo threat at a level that imposed no significant restriction on their operations near the shore.

Rear Admiral Ya'ari is the Commander, Haifa Base. A member of the Israeli Navy since 1965, he has an operational background that includes special operations and missile boats; also, he is a former Director of Naval Intelligence. Rear Admiral Ya'ari holds a bachelor's degree in the history of the Middle East from Haifa University, and a master's in public administration from the John F. Kennedy School of Government, Harvard University. He is a 1988 graduate of the Naval Command College of the U.S. Naval War College. His "The Littoral Arena: A Word of Caution," appearing in our Spring 1995 issue, won the College's Hugh G. Nott Prize for 1996.

The views expressed in the article are entirely those of the author and do not necessarily reflect any official position held by the Israel Navy.

New ships were built with armored hulls, "screens of cruisers" were replaced by aircraft, gunnery capabilities were improved; today, consequently, torpedo-boat attack—using torpedoes—is a thing of the past. Guided missiles, and precision weapons as a whole, are a totally different matter. We are facing today in the littoral the result of a major imbalance between maritime firepower and maneuverability, one that has developed since World War II and that missiles have dramatically exposed. Technically, the introduction of the missile into the maritime arena has created a differential between offense and defense, in which the latter is racing to match the opponent system-to-system but, in principle, constantly lags behind.[3]

Consequently, surface ships have been forced to become moving "weapon-islands," while submarines now rely principally upon maneuverability for their self-defense, retaining for that purpose only their primary attack systems—and in the case of ballistic missile submarines, not even that. In other words, the surface fleet has been obliged to give up maneuverability altogether as a means to defend itself, and to depend upon firepower alone. Conversely, submarines have abandoned the option of challenging their adversaries actively, in favor of remaining stealthy.

The environment in which these radical dynamics operate features the modern coastal defense system, a new element in warfare that should be watched very carefully. It has a potential to play a significant role in the future. In fact, coastal defense systems today look disturbingly like a stationary surface fleet. They have highly developed identification capabilities, long detection ranges, and passive sensors, and they employ coastal versions of the very weapons their opponents offshore carry. Further, they have few of a fleet's deficiencies: they do not sink, they are much less conspicuous and identifiable, and they have no inherent limits of resources, supply, ammunition, or man-power.

If the foreseeable future of maritime warfare is to be one of limited, low-intensity conflicts in the littoral, then an additional observation (a somewhat dramatic one) of Corbett concerning the torpedo threat is worth quoting: "Our most dearly cherished strategical traditions were shaken to the bottom. The 'proper place' for our battle-fleet had always been 'on the enemy's coasts,' and now that was precisely where the enemy would be best pleased to see it."[4]

We are not yet, to be sure, quite that far along; the nations involved have other options, and the process is still in its first stages. We should not miss, however, two points. First, judging by current trends and the obvious practical advantages the modern coastal defense system enjoys, it is likely to become the preferred solution for many littoral nations.

Second, and unlike Corbett's problem, the present imbalance between threat and response is not caused by a singular means—one kind of weapon system—countering which would maintain the battle fleet's superiority. Instead, we are looking at a threat that inherently tends toward comprehensive, across-the-board, competitive symmetry with the surface warships confronting it.

A modern coastal defense system—just like the fleet offshore—is controlled by a combat information center that integrates data from remote sensors, builds a tactical picture, and controls or coordinates the system's offensive and defensive assets. Most of those assets today are ground-based, mobile, widely dispersed, and camouflaged, benefiting from the fact that many seaborne sensor systems are not particularly effective for detection on land. In addition, a coastal defense system has its own dedicated air surveillance assets. Its aviation can be spread over a number of airfields and runways, with antiaircraft batteries protecting against strikes from offshore. A system built along these lines is capable, in principle, of matching or exceeding the capabilities of a surface fleet offshore.

By and large, this trend is either downplayed by naval strategic thinking or even practically ignored. The common wisdom prescribes a bold softening-up of the coast before forces are committed, an approach based on the inherent, historical superiority of the battle group. But that is precisely the point: that very superiority is beginning to come into question, and the likelihood of success in the preliminary phase is getting low. After all, a surface fleet in the littoral is operating in the worst possible scenario. Surface ships are built to be seen. Today, constrained by this very visibility and the lack of maneuver options, they must count on their own defense systems and continuous air superiority to survive—and under these circumstances, neither are "givens" any longer.

Options for Maneuverability

One possible answer is a major redesign of submarines aimed at making them fit for power projection and patrol missions near the coast, by becoming able, on the surface, to engage antisubmarine warfare platforms, especially airborne ones. It is mainly a matter of philosophy. This approach is in essence a simple one. It maintains the submarine's hull and propulsion design unaltered; in fact, it is a continuation of a process already underway.

In the Persian Gulf War, submarines participated in the land battle, operating within the littoral as substitutes for, or at least enhancements of, deep-penetration airborne strikes. Adding an active self-defense ingredient and relinquishing the traditional tendency to dive from a threat is, essentially, merely a matter of

degree. But submarines are costly; in practical terms it is not obvious that the submarine hull can be the littoral design paradigm for the next century. Perhaps it will be; however, we might also explore the opposite approach—to "lower" the surface ship.

That is to say, if one reduces the surface ship signature across the entire electromagnetic spectrum, the vessel becomes less of a constant target for the coastal defense system; its visibility to guidance systems of incoming weapons is reduced; and the amount and type of defensive means onboard can be lessened and changed. The result is a warship that can maintain a stealthy presence in "green" and "brown" waters.

Signature management, especially on all relevant spectrum bands, is a tough job on an existing ship. To use active means—to radiate or transmit—necessarily exposes the ship, whatever it does; even to install radar antennas increases radar cross-section (RCS); to launch or shoot weapons increases the infrared (IR) signature; and so on.[5]

The option of lowering the surface warship (as does, to a considerable extent, the U.S. Navy's "arsenal ship" concept) offers a number of design benefits. First, we gain a basic cruising posture that is much less vulnerable to radar, IR, and optical detection.[6] The low silhouette of the vessel reduces RCS and thermal "footprints" dramatically and makes optical sighting likely only at minimal ranges. As a result, the adversary is forced to deal with greater difficulties in detection and targeting, and the ship has much better options for countermeasures against incoming precision weapons.

Unlike for the submarine, diving to dodge the threat is not an option; but the prospects for other ways of keeping a missile away from the ship (that is, "soft kill") are significantly improved. In other words, although a surface ship cannot hope to outmaneuver modern precision weapons by speed or nimbleness, it may be able to do so by stealth. Stealth is indeed a form of maneuverability different from what Corbett was thinking of, but it is the only one at hand.

Other solutions proposed to offset the inherent disadvantages of surface ships, such as Admiral William A. Owens's "system of systems," are in essence a shift away from maneuverability entirely, toward a total firepower environment. Owens's vision holds the long-range, exoatmospheric threat to be the relevant one;[7] it posits a theater ballistic missile defense array, with lower and upper tiers of interception capabilities, all integrated into a theater command system.

But it has no answer for an SS-N-22 supersonic sea-skimmer, which is likely to be the typical threat posed by a coastal defense system. The key problem in the littoral—the short-range, zero-reaction-time posture of the surface fleet—remains before us. Global systems do not answer it, and no existing

point-defense system effectively counters it to a degree that allows for continuous presence within the coastal defense system's weapon envelopes.

Thus the "system of systems" is essentially a continuation of the same rationale that led to the point where we are today, at least in that it does not deal with the core problem of maneuverability versus firepower. In the littoral at least, no sound solution can bypass the need to confront this problem.

The Semi-Submerged Surface Ship

Certain elements are likely to remain unchanged in the naval force structure. Aircraft carriers, for example, will always remain surface platforms, and so will some other parts of the carrier battle group. Such ships, however, can and should be kept outside the littoral anyway. Those that must maintain presence, and project power from within a coastal defense system's range, have to be designed afresh.

First, such a ship must be built for two cruising modes. For covering distances in transit, a high-elevation, normal-cruising mode maintains the waterline at the optimum dictated by the traditional design factors for displacement hulls. For the "lurking mode," ballast tanks are filled, raising the waterline to the lower edge of the superstructure. In this mode the ship is floating on huge air cushions designed to maintain both stability and buoyancy. The thing is possible. Submarines do it, special operations craft do it, and there is no reason why a ship the size of a frigate cannot.

The second major new element is a specialized superstructure. The components that remain visible in Lurking Mode must be carefully chosen with respect to what systems can be done without, considerations of shape and size, and new options that now offer themselves, such as filament-thin fiber instead of armored coaxial cables.

Third, the design is purged of every existing system that the Lurking Mode makes redundant. With the present development of communications, for instance, the norm of self-sufficiency in detection is a blatant redundancy. Why not consider a ship without radar? It can get the "picture" from stand-off sensors via data links. Passive tactical picture-building can be a combined process, using data from remote sources and a ship's own passive arrays, which (as is already done for submarines) can be incorporated into the hull. Take off the radar antennas, retracting the ones that are used only when links are down or the picture has not been updated, and we immediately gain a significant reduction of RCS.

This approach, however, not only trims the ship of systems but also imposes new design parameters; masts and pilothouses, for example, have to be designed anew. Much the same happens with air intakes and exhausts, which must be

given a lower silhouette and repositioned well above the raised Lurking Mode waterline.

In terms of new options of exploiting sensor technology, the most interesting area is acoustic. Lurking Mode might make use of a passive "flank array sonar," if the noise level of the ship can be lowered. Quieting a surface ship might involve secondary electric propulsion, which can get, in principle, very close to the noise levels of conventional submarines today.

Again, by doing so one not only compensates for the sensors forfeited but also manages the ship's signature at all relevant frequencies. We will not create a submarine, but we will get a ship that is very capable, flexible, and stealthy compared to today's surface vessels.

There are two threats in the littoral to which both the submarine and the semisubmersible in the littoral are still vulnerable, however stealthy: mines and antisubmarine air. These two involve issues beyond the scope of this essay, but at the least a surface combatant in Lurking Mode can claim the same level of antiaircraft defense that ships have now, or very close to it, plus the benefits of its low overall profile, affecting the opponent's detection and targeting capabilities.

As far as mines are concerned, stealth opens possibilities for preventive anti-minelaying operations within the littoral. Also, the quieting of the ship for Lurking Mode provides protection against acoustic mines. An innovative approach in this area can give us dramatic improvement in counter-mine warfare and in survivability as well.

The Broader Picture

Those who in 1911 attempted to respond to Julian Corbett's alarm had at least one benefit we do not have: fairly fresh, relevant, practical experience and precedents (in the Sino-Japanese, Russo-Japanese, and Spanish-American wars). Today, as far as full-scale war at sea is concerned (and in contrast with air and land conflict), we have nothing more recent to draw upon than World War II. The Yom Kippur War and the Falklands/Malvinas campaign have provided very important clues as to the scale and seriousness of the problem but essentially demonstrated only fractions of the entire picture, and both scarcely involved the littoral we now face.

This is an extremely tricky situation—reasons for change and reasons to maintain course may appear equally unsubstantiated by recent naval history. Nevertheless, there can be no mistake about actual trends in the development of coastal defense systems; they are perfectly obvious, for instance, in the Middle East and the South China Sea.

We are obliged to make some assumptions for the future. If we assume that it is possible to reach a symmetry of raw capabilities between a naval task force and a coastal system defending against it, then we have no alternative but to modify the task force's properties in ways that compensate for its inherent weaknesses.

The most significant vulnerability stems from the fact that surface ships operating in the littoral have no meaningful maneuverability options; they must depend entirely upon firepower-based protection, or its analogue, maneuverability by stealth, if they are to deploy there. In that realm, and however attractive firepower may seem, such options as the "system of systems" only diminish (and very expensively) the real problem, the fundamental degradation of traditional maneuverability .

In a sense, regaining the effective ability to maneuver is a precondition for the "system of systems" and other concepts arising from the apparent "revolution in military affairs."[8] It would ensure their cost-effectiveness, if not their outright feasibility, by reducing significantly the need to hide or provide cover for ships, and freeing resources for "falsifying" the enemy's picture of the realities.

The design of semisubmersible surface combatants seems to be a straightforward engineering problem—just as making submarines operate on the surface is one of philosophy. This is not to say that designing a semisubmersible surface ship is a simple matter.

There are quite a few serious difficulties to overcome, especially with respect to stability and sea-keeping. Also, how in practical terms a vessel might operate from day to day in Lurking Mode is still full of uncertainty. However, such matters should be very high on the priority list of navies everywhere, as they enter the twenty-first century. We had better do our homework before we embark on massive expenditures for yet another layer of traditional systems to shield blue-water navies from their future littoral adversaries.

Notes

1. Julian S. Corbett, *Some Principles of Maritime Strategy* (London: Longmans Green, 1911), p. 122, reprinted, with an introduction and notes by Eric J. Grove (Annapolis, Md.: Naval Institute Press, 1988), p. 123.

2. See the author's "The Littoral Arena: A Word of Caution," *Naval War College Review*, Spring 1995, pp. 7–21. The arguments of that article are recalled at several points in the present essay.

3. Ibid., esp. pp. 9–14.

5. John W. McGillvray, Jr. (Capt., USN), "Stealth Technology in Surface Warships," *Naval War College Review*, Winter 1994, esp. pp. 30–6.

6. See Reuven Leopold, "The Next Naval Revolution," *Jane's Navy International*, January/February 1996, pp. 12–20.

7. William A. Owens, *High Seas: The Passage to an Uncharted World* (Annapolis, Md.: Naval Institute Press, 1995), pp. 105, 148–9.

8. For assessments of the "revolution in military affairs," see, among many others, Colin S. Gray, "The Changing Nature of Warfare?" and James H. Patton, Jr., "The New 'RMA': It's Only Just Begun," *Naval War College Review*, Spring 1996.

<p align="center">Ψ</p>

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BOOK REVIEWS

A book reviewer occupies a position of special responsibility and trust. He is to summarize, set in context, describe strengths, and point out weaknesses. As a surrogate for us all, he assumes a heavy obligation which it is his duty to discharge with reason and consistency.

Admiral H.G. Rickover

"The Nature of War and Warfare in Our Times"

Gelven, Michael. *War and Existence: A Philosophic Inquiry.* University Park, Pa.: Penn State Press, 1994. 272pp. $16.95

MICHAEL GELVEN'S *WAR AND EXISTENCE* is not the kind of book military officers would normally pick up and browse through. It is neither a detailed historical account of a major naval battle nor an engrossing personal war narrative. As indicated by its subtitle, it is that oddest of books, a philosophic inquiry. As such, one might expect it to be difficult to read and understand; fortunately, it is not. It is a clearly written and lucid philosophic exploration of the nature of war and warfare in our times.

Gelven, a professor of philosophy at Northern Illinois University, is concerned with understanding one thing—what is the truth about war. His search for that truth causes this book to be an inquiry rather than a treatise. His corresponding methodology is simple and questioning. He wants to go from darkness to light, from vagueness to refinement, from the phenomenon itself to what explains it.

In doing so, Gelven discovers that war is existential—something real and tangible—more than conceptual; it has significance and meaning. While this may seem obvious to those who serve in the military, it is not so obvious to academics in general and philosophers in particular.

Existential war is also paradoxical. We, as human beings, are attracted to peace and yet often find ourselves engaged in its opposite—fighting, killing, and destroying. This paradox is marked by nine characteristics: war is vast, organized,

communal, historical, sacrificial, violent, horrific, heroic, and a game. For these Gelven offers detailed descriptions.

At the heart of the author's discussion is the we-they principle. He thinks that the best way to make sense of war is to understand it as a result of our desire to esteem the "we" (or whatever we see as constituting our group) and denigrate the "they" (those who do not belong to our group). There is no other coherent way to understand war, to include the often-given reasons of morality or nihilism.

Later in the book, Gelven goes so far as to argue that we can never find a case where one nation went to war against another nation for either purely moral reasons or merely for personal gain. And therefore it makes no sense to talk about war in these terms.

It is at this point that I note one of the two weaknesses in Gelven's work, the one that I take to be the more significant. He does not recognize that war can *only* be understood as a moral phenomenon and that it achieves its meaning through that context. As Michael Walzer points out in his classic work, *Just and Unjust Wars*, war is discussed in only two ways—in the languages of strategy and morality. The first language is descriptive, while the second is prescriptive. We cannot make sense of it any other way.

I argue that Gelven fails to understand as much. When we go to war, we do so only when we decide that the value of going to war is worth more than the value of not going. We recognize that war entails the loss of lives and the destruction of property and therefore should not be taken lightly. However, we also know that other actions, such as one country violating another country's territorial integrity or causing its loss of political sovereignty, require active responses, which are often expressed in the form of war. These determinations, these judgments to make war, can only be understood as the result of moral valuations, nothing else.

Admittedly, it is true that we do not go to war for purely moral reasons. Often our motives are mixed ones at best, as in the Persian Gulf War. In that case we went to war both to secure our sources of oil and to reestablish the nation of Kuwait. But because motives are mixed does not mean that they are de facto bad. We often feel strongly about things for various, and sometimes apparently contradictory, reasons, like when our teenagers start driving cars or leave home to go out into the big world. While we may fear accidents or their failure, it is still better that they do those things than not do them. Likewise in the case of our motives for war.

The book's other weakness is minor in comparison. Gelven has not put together a strong final chapter that draws together his overall argument. He does such a nice job in his introduction that the lack of a conclusion is conspicuous.

Nonetheless, *War and Existence: A Philosophic Inquiry* is certainly a worthy addition to the libraries of our military colleges and academies. It is a clear and lucid investigation into the nature of war and offers an interesting description of the phenomenon itself.

John D. Becker
Lieutenant Colonel, U.S. Air Force

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Weinberger, Caspar, and Peter Schweizer. *The Next War*. Washington, D.C.: Regnery, 1996. 404pp. $27.50

Former Secretary of Defense Caspar Weinberger and Hoover Institution scholar Peter Schweizer have written an intriguing book. *The Next War* presents five "literary war games," hypothetical future scenarios in which warfare erupts between states. None was based upon any specific current indicators; indeed, Weinberger and Schweizer constructed each scenario so that their "postwar analysis" argues for the authors' current national security policy objectives. Although Weinberger and Schweizer do not explicitly state this as their goal, their preface provides an extensive discussion of perceived weaknesses in current U.S. military force structure, operational readiness, intelligence collection and analysis, and especially nationwide ballistic missile defense. Consequently, the authors designed their scenarios to illustrate these perceived weaknesses.

Each of the five scenarios is concise and well written, and each offers sufficient detail to allow the reader to follow the protagonists' strategic and operational options and intentions without descending into tactical detail. For example, one scenario postulates a nuclear-armed Iran first undermining, then assuming, the government of Bahrain. From this position, Iran is able to blackmail both the United States into withdrawing from the Arabian Gulf and the Saudi kingdom into following Iranian policy on oil exports. By setting aside tactical details, Weinberger and Schweizer are able to focus on U.S. decision-makers' options regarding force employment and how perceived military weaknesses limit or deny options to the national leadership.

While there exists in each of these scenarios some degree of plausibility, none struck me as a likely next war. Each involves conflict between nation-states; four of the five assume the use of nuclear or biological weapons at the operational level of war; there is little or no involvement of allied powers; enemies achieve strategic surprise against the United States; and each ignores or minimizes U.S. core military strengths in command and control, aerospace dominance, naval flexibility, operational maneuver, and rapid force mobilization and buildup. By focusing only on the highest level of war, namely large-scale conflict between states,

Weinberger and Schweizer ignore the wider range of threats, operations, and conflicts that are most likely the next wars to involve U.S. troops.

ROBIN K. MYERS
Lieutenant Commander, U.S. Navy

Snow, Donald M. *Uncivil Wars: International Security and the New Internal Conflicts.* Boulder, Colo.: Lynne Rienner, 1996. 177pp. $18.95

The post–Cold War international environment brought on a series of internal conflicts that were curiously "nonmilitary," resulting in a myriad of opinions and models for a new world. Donald Snow's *Uncivil Wars* offers yet another perspective. However, Snow's view is quite significant.

This book explores "contemporary" internal conflicts, defining them as the "more or less systematic murder and terrorizing of civilian populations." It is indeed the principal form of current systemic violence, even though the world now, according to Snow, is a more stable place.

Snow convincingly argues that these new internal wars are a sufficiently different phenomenon to warrant world-wide intellectual and policy attention. The prototypes he discusses (Somalia, Ethiopia, Sierra Leone, Liberia, Georgia, Tajikistan, and Sri Lanka) seem less principled in political terms and less focused on the attainment of some political ideal. They do not fit the Clausewitzian mold of an extension of politics—"They seem more vicious and uncontrolled in their conduct." They are unlike the traditional Maoist or any

other political philosophy that the United States has learned to understand.

Snow offers the military strategist a new and unique understanding of a strange and unfathomable type of conflict. No military action can deal with the real underlying problems. In a stroke of classic strategic thought, the author rightly contends that contemporary internal war can no longer be explained in terms of Clausewitzian analysis, and that to respond to them with perspectives and strategies appropriate to the Cold War is ineffective.

This book offers the strategist a means for discerning how to assess a nation's national security and its appropriate military strategy. The destruction of colonial boundaries left many newly formed sovereign states "economically unified but [often] not politically." As a result, ethnic strife has raged out of control.

Snow's new breed of internal war has no common center of gravity and no kinship with the traditional Maoist mobile-guerrilla strategy. If one accepts this notion, then Snow's uncivil wars have important implications for international politics and military affairs.

In view of the media's ability to make internal strife very public, the United States will be tempted in future conflicts to intervene and "staunch the slaughter." Snow admits, however, that as a nation the United States is unfortunately not well organized to understand and deal with this kind of conflict; its framework for approach is that of the Cold War—traditional wars of national liberation.

Snow labels a definitive three-tier system that determines a nation's relevance on a scale of economic and

political well-being. It allows him to establish, somewhat analytically, that "the areas that lie principally outside the growing global economy" are the areas where most of the internal violence takes place. It is the emerging global world and the traditional nonplayers that are causing the majority of discontent.

Snow asks how the world's strongest countries (or as Snow labels them, "the First Tier") will deal with these unstable countries at the bottom of his Second Tier. Removing a Soviet-type interest in these countries for the United States to counter leaves the United States "with hardly any interests on which to exert its energies." It leaves the nation facing a dichotomy—it remains confused about how to deal with crises on a strategic level. But "how many simultaneous Chechnyas, Bosnias, and Somalias is the system willing to tolerate?" Whether or not First Tier nations will attempt to moderate or influence the lower tiers' internal violence, a thorough understanding of the dynamics of that violence is required.

Snow appropriately conveys these dynamics with this intriguing and unique book. *Uncivil Wars* is a must for all strategists—political and military. In short, it may be the best book to help one gain a better understanding of how contemporary wars may affect the security of the larger global system, as well as the role of the United States in the post–Cold War era.

DOMINIC J. CARACCILO
Major, U.S. Army

Mensah, Thomas A., ed. *Ocean Governance: Strategies and Approaches for the 21st Century.* Honolulu, Hi.: Law of the Sea Institute, 1996. 628pp. (No price given) (Order from BookMasters, Inc., P.O. Box 2139, Mansfield, Ohio, 44905.)

During the week of 11 July 1994 the Law of the Sea Institute sponsored its twenty-eighth annual conference. Its objective was to identify the principal elements of functional oceans governance for the twenty-first century. This daunting task involved in-depth analyses of the fundamental issues, risks, and concerns looming on the horizon, including boundary disputes, allocation of living and nonliving resources, environmental degradation, climatic modification, and transit and jurisdictional rights. The topical discussions were viewed through a geopolitical thematic lens, examining oceans management from global, regional, national, and local perspectives. The conferees were a distinguished gathering of ocean law, policy, and technical experts from government, business, and academia. The diversity of the participants lent singular credibility to the meeting, but most importantly it precipitated a candid and productive dialogue concerning the most appropriate means of managing mankind's last great resource. In addition to their peerless credentials, the participants' variegated geographic and political orientation made the conference a truly world-class assemblage.

This treatise is a compilation of the formal presentations, speeches, and panel and roundtable discussions that took place over the course of the

conference. It was edited for publication by Professor Thomas Mensah, director of the Law of the Sea Institute, professor of law at the University of Hawaii and former Assistant Secretary General of the United Nations International Maritime Organization. Mensah is a subject-matter expert and is eminently qualified for the task of organizing the material contained in this book.

The conference coincided with the most historic period in contemporary ocean law and policy matters; later that month the General Assembly of the United Nations was scheduled to adopt the Supplemental Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982. Furthermore, on 16 November the Convention itself entered into force, heralding what purported to be a new era in qualitative ocean governance. These somewhat euphoric events served as a backdrop while the conference delved into the realities of administering a twenty-first century marine environment under a twentieth-century political framework. In the main, the authors recognized that the United Nations Convention on the Law of the Sea is by far the most comprehensive international agreement yet of widespread ratification relative to the use of the oceans. However, the book also tends to suggest that parochial nation-state policies and agendas, which in large part were the stimulus for the Convention, have not been eradicated, and in some degree may have been encouraged by the jurisdictional reach facilitated by the agreement. The fact that nation-states appear to view

themselves as in perpetual competition for a declining resource casts substantial doubt on whether the global or regional methodologies contemplated by the panel members can ever supersede the nationalistic "me-first" disposition that currently predominates. The manner in which the book is organized and the specific issues are articulated by individual authors (for example, William T. Burke in "State Practice, New Ocean Uses, and Ocean Governance under UNCLOS," and "National Interest and Collective Security in the Ocean Regime" by Scott Allen) permits the reader to understand how jurisdictionalism, as developed and implemented by state practice, may be particularly problematic for the development of a true internationalistic conservation and management system. Notwithstanding this fact, the essential thrust of the text appears to assert that despite the jurisdictional preferences provided by the Convention, inspired by Cold War dogma and national self-interest, only a holistic approach can provide the integrated administration required for the vast oceans resource.

One of the highlights of the treatise is L.D.M. Nelson's treatment of the Supplemental Agreement. It provides a comprehensive overview of the issues involved in the deep seabed mining consultations, one that is informative, intelligible, and easy to read. The Panel IV discussions regarding the maritime regions of northeast and south Asia were notable for their potential national security implications. Although the article on northeast Asia focused on regional environmentalism, it also examined the political "integrative and disintegrative"

forces, that is, common needs and concerns, divided countries, and the deep-seated distrust which distinguish this volatile area. The idea that a regional comprehensive security regime could enhance environmental protection but also portend well for United States security interests is very insightful. The piece on south Asia was equally distinctive in its frank analysis of an area that is of great importance to the strategic maritime interests of the United States. The author depicts a geographic, economic, and military disparity between the nations of the region that reflects a significant regional fragility in an area that encompasses important sea lines of communication and maritime approaches.

As a whole this work is extremely thought-provoking. It opens a window into the next century relative to the numerous issues in oceans governance facing the international community. Its critical examination of the multidimensional aspect (local subsidiaries, nationalism, regionalism, and globalism) involved in seeking an effectively integrated yet efficient management approach to the marine environment lays the foundation for further substantive policy developments.

JAMES W. CRAWFORD
Commander, U.S. Navy

Payne, Keith B. *Deterrence in the Second Nuclear Age*. Lexington, Ky.: The Univ. Press of Kentucky, 1996. 160pp. $26.95

This relatively short book provides an excellent overview of the history and future of deterrence, which was the focus of considerable and spirited debate during the Cold War. Today it continues to be a major issue as the United States faces a variety of threats from different nations whose interests are inimical to its own.

Payne raises the unsettling question of whether the American policy of deterrence vis-à-vis the Soviet Union during the Cold War can be accepted as the reason for the preservation of peace (albeit an uneasy one). His position is that no matter which policy approach is selected (warfighting, mutual assured deterrence, or minimum deterrence) it remains uncertain whether any of them could really work. From that basis, and since we cannot know conclusively that deterrence worked in the past, it is impossible to know if it will work against "rogue" states in the future.

It is the author's view that a required element for any deterrence program is enough information to permit a deterring state to believe the opponent is rational in its decision making, and to know its values and its culture. The United States possessed that kind of information about the Soviets. However, the nation cannot assume that it will have the same kind of insight into other nations, many of which are third-rate powers that have acquired nuclear, biological, or chemical weapons and will inevitably acquire a means to deliver them. The belief that Saddam Hussein would act in a rational manner is cited by the author as one of several historical examples in which faulty expectations have led to disaster.

It is suggested that the United States develop a lot of intelligence about all of its potential enemies, including

information about how the leaders of hostile states think, what their decision-making processes are, how to communicate with them effectively in a crisis, and what their national cultures are. The latter is most important, given that some cultures accept war and death with far less apprehension than do most Americans. Payne provides an eleven-point checklist as a guide to the kind of information needed; despite its brevity and simplicity, information collected under its guidelines would be very helpful to any national security decision maker.

Another and equally important point is that despite excellent intelligence collection and analysis, the United States still may not *really* know what such states as the People's Republic of China, North Korea, Libya, or Iraq will do when faced with a deteriorating economy; when sponsoring international terrorism that could include nuclear, chemical, or biological weapons; or when considering simple, naked aggression.

The author suggests that deterrence in the second nuclear age be based on "denial," the threat to destroy the challenging state's military assets. If deterrence should fail, the threat would become a reality. However, on the defensive side, the argument is made that a missile defense system would be feasible as a means of protecting against threats from "rogue" states.

These recommendations, of course, include some very broad assumptions. First, it is not always easy to destroy military assets quickly and effectively; second, the United States is still some time away from possessing a credible

missile defense system. Crisis-action planning scenarios need to be created that target the worst cases. It would, after all, be difficult for the U.S. government to accept a bloody nose caused, let us say, by a nuclear-tipped North Korean missile, only then deciding how to respond appropriately.

JACK A. GOTTSCHALK
Livingston, New Jersey

Danopoulos, Constantine P., and Cynthia Watson, eds. *The Political Role of the Military: An International Handbook.* Westport, Conn.: Greenwood, 1996. 517pp. $110

In this volume, the editors present twenty-seven case studies that trace the historical evolution of civil-military relations in Europe, Asia, Africa, and the Americas. Their objective is to analyze socioeconomic and political factors that have influenced the role of militaries in government, political economy, and issues of national security. Essays by scholars from around the world place special emphasis on current and future scenarios of civil-military relations in the post–Cold War era. Attractive features of this work are its global scope and suitability for comparative analysis. For example, Rut Diamint and Cynthia Watson's piece on the Argentine military's steady withdrawal from internal politics contrasts sharply with Veena Gill's assessment of the increasing role of the Indian military in internal security and domestic affairs. Dongsung Kong's coverage of North Korea, Sharly Cross's analysis of Castro's Cuba, and Ulf Sundhaussen's treatment of the

Indonesian military illustrate the varied degree of military influence in states characterized by single-party, authoritarian systems. The impending crisis of legitimacy inherent to each is carefully weighed against the historical circumstances that brought these military-backed regimes to power. Wisely, the editors have not given attention solely to the militaries of the proverbial "Third World." An essay by Stephen Cimbala on the United States military addresses the recent trend toward centralized civilian control and the complexities and challenges of multinational operations. Hitchins and Jacobs's survey of the United Kingdom presents the enduring dilemma of Northern Ireland and the military's role as an agent of domestic stability. George Vasquez's piece on the Peruvian military offers further comparative treatment of the impact of terrorism on a military's involvement in domestic politics. Other essays include coverage of the former Zaire, South Africa, Poland, Japan, Israel, and Denmark. They round off this handbook as a valuable tool for comparative study. Most importantly, each author provides valuable suggestions for further reading.

<div align="center">PAUL M. SIMOES de CARVALHO
Second Lieutenant, U.S. Army Reserve</div>

Cohen, Eliot A., and Thomas A. Keaney. *Revolution in Warfare? Air Power in the Persian Gulf.* Annapolis, Md.: Naval Institute Press, 1995. 226pp. $38.95

Even before the Gulf war had ended, it was realized that a high-level and independent study was needed to assess the performance of U.S. airpower. The Gulf War Air Power Survey was thus chartered by Air Force Secretary Donald Rice, and the well known scholar Eliot Cohen of Johns Hopkins University was tabbed to lead it. Published in six volumes in 1993, the Survey had limited distribution. Fortunately, the immensely readable summary volume, coauthored by Cohen and Professor Tom Keaney of the National War College, has been revised and republished.

When General Norman Schwarzkopf began planning a response to the Iraqi invasion of Kuwait in August 1990, he quickly realized that all talk of AirLand Battle and ground assault was hopeless. Not only did he lack enough troops to dislodge the several hundred thousand Iraqis already digging in, but he knew such an assault would be extremely bloody. Instead, he turned to the Air Force chief of staff and asked for an offensive air option. The result was INSTANT THUNDER—a plan for the rapid and massive application of airpower at the strategic level of war. The codename was a deliberate counterpoint to the slow, painful, and ineffective policy of "gradual escalation" followed in Vietnam. That war had haunted American political and military leaders; the Gulf war would be an opportunity to expunge those ghosts.

INSTANT THUNDER was modified and expanded in Riyadh, Saudi Arabia, to include hundreds of targets at the tactical and operational levels of war as well as strategic. Republican Guard divisions were singled out for special attention. For five weeks beginning the night of

17 January 1991, the coalition air arms flew an average of 2,500 combat sorties each day. By the beginning of the ground offensive on 24 February, the Iraqi army had been devastated—nearly ninety thousand men had already deserted, and another ninety thousand would soon surrender with hardly a fight. In addition, thousands of tanks, artillery pieces, and armored vehicles had been destroyed from the air. Coalition ground troops completed the rout. It was the most lopsided victory in modern history.

Cohen and Keaney tell the story well, but dispassionately. They give airpower credit where deserved and list a number of its greatest accomplishments: total and uncontested air supremacy, the destruction of the Iraqi air force and navy, the shutdown of the electrical power grid, the complete disruption of all road and rail traffic en route to the front, and most important, the destruction of a corps-sized Iraqi attack at Khafji in late January, the first (and last) attempt by the Iraqis to launch an offensive and fight the war on their own terms.

There were also, however, serious shortcomings in the air campaign. Whereas it had been a coalition goal to destroy the Iraqi nuclear, chemical, and biological weapons capabilities, this was not done, largely because intelligence could not provide the extent of these programs or their locations. Precision weapons are only useful if you also enjoy precision intelligence—that was not the case in the Gulf. In addition, the attempt to eradicate the Scud menace was unsuccessful. Although the number of missile attacks decreased significantly,

it is questionable whether that was due to the large air effort. The authors conclude that it is unknown if *any* of the Iraqi Scuds were destroyed during the war.

To the rhetorical question posed by the book's title, the authors answer with a qualified "yes." Technologically, the Gulf war was a major leap forward in combat effectiveness: stealth, precision munitions, and near-real-time intelligence provided unprecedented success and point the way ahead. However, the authors add the caveat that the organizational structures and mindsets needed to utilize these new technologies most efficiently are not yet in place. When (if) such changes occur, a true revolution in military affairs will have been demonstrated.

Overall, this is an excellent, well written, and evenhanded book that includes dozens of maps, charts, and tables. This is by far the most useful and authoritative work to date on the air war in the Gulf. It is must reading for all students and practitioners of warfare.

PHILLIP S. MEILINGER
Colonel, U.S. Air Force

Mandeles, Mark D., Thomas C. Hone, and Sanford S. Terry. *Managing "Command and Control" in the Persian Gulf War.* Westport, Conn.: Praeger, 1996. 170pp. $55

Mark Mandeles, Thomas Hone, and Sanford Terry are all well qualified to analyze Gulf war command and control issues. They were the principal drafters of the command and control portions of the authoritative Gulf War Air

Power Survey (GWAPS) commissioned by the Secretary of the Air Force. In this book they borrow heavily from that experience but go beyond the facts as originally reported and interpreted, offering their own personal appraisal, unconstrained by the collegial or institutional pressures inevitable to some degree (in spite of disclaimers to the contrary) in a department-sponsored study.

However, prospective readers need to be warned that the title of the book is misleading. This is not an examination of command and control of coalition forces in the Gulf war. It focuses almost exclusively on *air* command and control issues and how they were managed. Ground and naval command and control issues are scarcely mentioned, and coalition issues are addressed only as they bear on aviation.

Nevertheless, this slim book is a major contribution to the command and control literature. Put simply, the authors have written the most exhaustive examination of the Gulf war air command and control experience yet published, going beyond the detail to analyze what it means. The authors' primary interest was to examine how chaos in planning and directing operations was managed—particularly by an Air Force leadership in-theater that was skeptical of the quality of their command and control support and believed in putting their highly personal stamp on problem solving. Although it is a truism that people are more important than systems in achieving effectiveness, the authors seem to believe that the on-site U.S. Air Force leadership went too far. Rather than fix flawed systems,

it improvised, at what the authors believe to have been a high price.

Lieutenant General Charles Horner (the Joint Forces Air Component Commander, or JFACC) comes through with his laurels largely intact (even though he delegated too much to his principal planning and execution subordinate, Brigadier General Buster Glosson, and did not do enough to make his staff joint). Glosson's effectiveness is admired, but his methods, abrasive style, and apparent contempt for systems, though often well founded, come in for criticism.

The conclusions of the analysis offer aphorisms that future air planners and JFACCs probably already know but need to keep in mind, such as: learning *precisely* what to do in war is not as important as learning *quickly* what to do; he who controls the target list and the sequencing controls the (air) war; it is difficult to translate air supremacy, and the surveillance made possible by it, into effective pinpoint targeting; and, because exercises do not replicate demands for bomb damage assessment, the assessment system is never tested, nor are needed resources provided. There are many others, enough to warrant distilling the collected wisdom in future JFACC handbooks. The critique of scripted air power application is the best that this reviewer has seen.

What are the book's shortcomings? Although a glossary is provided, the jargon and acronyms are so dense at times that only air command and control experts will understand the work. The author's description of the Scud hunt problem as analogous to the Navy's World War II antisubmarine

warfare problem is an interesting perspective but is probably overdrawn. The reluctance to refer to parallel analytic studies of Gulf war command and control issues (journalistic accounts are cited) will appear as a shortcoming for serious scholars of the war. For example, I was unable to find any reference to Alan Campen's excellent *The First Information War* (AFCEA Press, 1992) in the text or in any of the copious and detailed endnotes.

But these shortcomings must be viewed in the context of the major contribution the work provides. This book should be on the shelf of any current or aspiring JFACC. It tells us what must be fixed and what must be avoided when we next enter combat, particularly if we face an enemy more capable than Saddam Hussein.

<div style="text-align:right">JAMES A. WINNEFELD
Rear Admiral, U.S. Navy, Retired</div>

Pape, Robert A. *Bombing to Win: Air Power and Coercion in War.* Ithaca, N.Y.: Cornell Univ. Press, 1996. 336pp. $19.95

Professor Robert Pape's systematic critique of the effectiveness of strategic bombing as a decisive instrument of war will not be welcomed by air power enthusiasts, especially while the National Defense Panel prepares its recommendations on the shape, structure, and resourcing of the Department of Defense for the twenty-first century. Pape, one of the founding faculty members at the Air Force's premier School for Advanced Airpower Studies and now an assistant professor of government at

Dartmouth, logically analyzes the dynamics of modern military coercion by means of air power to demonstrate the historical irrelevance of strategic bombing as a way of achieving decisive effects in war. Studying cases ranging from the Spanish Civil War through Operation DESERT STORM, Pape concludes that "strategic bombing does not work. Strategic bombing for punishment and decapitation does not coerce, and strategic bombing is rarely the best way to achieve denial." Furthermore, contrary to the flamboyant—and ahistorical—claims of retired Air Force Colonel John Warden and other devotees of General Giulio Douhet (an advocate of the establishment of independent air units, strategic bombing, and the author of *Il dominio dell'aria*, 1921), the advent of precision-guided munitions is not likely to enhance the coercive effects of strategic bombing.

Touching on numerous attempts to use strategic air attack over the last half-century, Pape provides a detailed analysis of strategic bombing in World War II, Korea, Vietnam, and DESERT STORM. Contrary to the "historical" case built for the role of strategic bombing by air power enthusiasts, Pape concludes that strategic bombing has been generally ineffective and occasionally counterproductive. The one possible exception is LINEBACKER I, the air campaign devised to counter North Vietnam's invasion of South Vietnam in the spring of 1972. LINEBACKER I, however, was an interdiction campaign, albeit one with a strategic effect. It worked because the strategic objectives of the United States had changed from winning the war to withdrawing as

gracefully as possible, and because the South Vietnamese army fought very hard. Air power was pivotal but not decisive.

Pape concludes that strategic bombing is perceived as an alternative to the bloody realities of war because political leaders are ever in search of cheap solutions to complex international problems. Now dubbed the "strategic air campaign" by the neo-Douhetans, the notion that striking "critical nodes" in electrical, communications, and transportation systems can bring quick, easy, and painless victory is still appealing. Unfortunately, while history does not bear out this argument, most political leaders and too many military leaders are not savvy enough to counter these historically corrupt and false promises.

Pape might have bolstered his case by giving the U.S. Air Force more credit for doing what it was designed and structured to do in the post–Korean War era: to deter the Soviet Union by the threat of massive nuclear retaliation. The Strategic Air Command, which by 1959 counted 1,854 bombers in its inventory, succeeded in its primary mission of deterrence by being prepared to obliterate the Soviet Union, China, and the Warsaw Pact nations, should that have been necessary. But since the world of 1997 is very different from that of 1959 or even 1989, this ought not be of much comfort to die-hard air power enthusiasts. The United States Air Force could, in fact, be quite vulnerable—its reason for being is not so apparent today as it once was.

Bombing to Win is a critically important book. If we are fortunate, Warden and his followers will mount a "counter-Pape" campaign in various

professional journals, and our corporate knowledge will grow by the ensuing debate. In any event, every member of the National Defense Panel should be sent a copy of *Bombing to Win*.

EARL H. TILFORD, JR.
Army War College
Strategic Studies Institute

Zakheim, Dov S. *Flight of the Lavi: Inside a U.S.-Israeli Crisis.* New York: Brassey's, 1996. 277pp. $25.95

"How can a nice Jewish boy oppose the State of Israel?"

Dov Zakheim, an Orthodox Jew and a former United States Deputy Under-Secretary of Defense, has written a gripping account of his role in the cancellation of Israel's Lavi fighter program. It was a role that would test his analytical abilities, his patience, and his courage, and it would bring great pressure to bear on members of his family, not all of whom agreed with his effort to end the Lavi program.

Designing and developing a new tactical airplane, particularly a new fighter, is a very exciting and emotional undertaking even for the larger, established aircraft manufacturing companies. But when the designer, developer, and prospective builder is Israel Aircraft Industries (IAI), which views the project as a first-rate tactical aircraft that is necessary to increase the warfighting capabilities of the Israeli Air Force and as a vehicle to expand Israel's technology base and provide jobs for Israeli workers, as well as strengthen Israel's foreign military sales (all at the expense of the United

States), emotions in Israel and in the American Jewish community run very high indeed. That these emotions would involve Zakheim's immediate family should come as no surprise to the reader.

Some might think that assigning an Orthodox Jew the responsibility for killing a pet Israeli fighter program was an extremely Machiavillian exploitation of that official. Zakheim, however, clearly took the high road in his assignment from the Secretary of Defense, applying that which is too often missing from official decision making—common sense based on responsible analysis. Clearly, there were those whose expectation was that the United States would pay for whatever equipment and systems the Israelis said they needed—expectations justified by thirty years of nearly unlimited support.

However, this time there simply were not enough U.S. defense dollars to go around. The issue was not whether Israel needed a new-generation fighter plane—it did—or whether IAI was capable of executing a major tactical airplane program—IAI had already proved itself capable in the 1970s with the very successful Kfir program. The issue was whether there was a more cost-effective alternative that would meet Israel's fighter requirements without crippling other vital defense programs. There were several candidates. Working from costing templates developed for similar U.S. fighter programs and information only grudgingly provided by IAI, Zakheim and his team of Department of Defense analysts were able to show convincingly that cost and schedule projections for the development and production of the Lavi were

excessively optimistic. Convincing the Lavi's strong body of supporters in IAI and at the highest levels of both the Israeli and U.S. governments took more than two years. Finally the Israeli cabinet canceled the program at the end of August 1987. In the final analysis, Zakheim's successful efforts to force termination of the Lavi program were in the best interests of both Israel and the United States.

Dov Zakheim's account of his meetings with the most senior Israeli leaders, including two prime ministers, and with key members of the U.S. Congress for a period of over two years is fascinating. More fascinating, however, is the opportunity to glimpse the intricate personal relationships between key Israeli leaders and the American-Jewish community (of which Zakheim's father was a prominent member, as well as a lifelong personal friend to many of the Israeli leaders, including Prime Minister Yitzhak Shamir).

There are several "pieces" to this book: the story of the Lavi program and its ultimate cancellation; the story of Dov Zakheim's intensely stressful personal involvement in leading the fight against the program; and the story of a deeply religious and patriotic man who compromised neither his strong beliefs, nor his heritage, nor his commitment to serve his country. Finally, Zakheim's weaving of the political and the programmatic with his religious beliefs and his insights into the commitment of Orthodox Jewry is both interesting and enlightening.

C.E. ARMSTRONG
Rear Admiral, U.S. Navy, Retired

Gatchel, Theodore L. *At the Water's Edge*. Annapolis, Md.: Naval Institute Press, 1996. 288pp. $32.95

The complexity and difficulty of landing forces on a hostile shore are well known, yet in this century remarkably few defenders have succeeded in keeping their opponent from establishing a lodgement ashore. Why? What is it that occurs (or doesn't occur) at the water's edge that makes this most difficult of all operations so consistently successful despite its long odds?

Gatchel is well qualified for the challenge of providing an explanation. A widely experienced practitioner of the amphibious art at virtually every organizational echelon, he finished his thirty years in a Marine uniform as head of the Operations Department at the Naval War College, arguably the birthplace of modern U.S. naval thought concerning landing operations within a naval campaign. His operational experience and academic insight make a combination that few other commentators can match.

This book's purpose is direct yet subtle for those who have struggled to sell the value of amphibious capability. Instead of following the traditional path of amphibious commentators and highlighting the attacker's problems, Gatchel places the amphibious problem in reverse, inviting us to consider the enemy's difficulties and the historical lack of success in stopping an operation that appears to face so many daunting challenges. The result is less a "how to" for the defense than a revealing view of the fundamental features of successful landings and the implications for future amphibious operations.

At the Water's Edge has a provocative theme, particularly for U.S. planners in the wake of DESERT STORM. Gatchel maintains that despite the acute challenges facing an amphibious attacker, the attack has consistently proved *stronger* than the anti-landing defense, provided the attacker has grasped the essential naval character of the operation and equipped himself accordingly.

Beginning with a conceptual analysis of the anti-landing problem, he then proceeds through the defender's side of virtually all of the major amphibious operations of the twentieth century, from Gallipoli to the Falklands. In eleven separate case studies, Gatchel highlights specific national variations in the search for solutions to the conceptual problems outlined in the initial chapter. To those who have concluded that amphibious assault is dead, the continuities and differences between Turks, British, Germans, Americans (at Wake and Midway), Japanese, North Koreans, and Argentinians are striking indeed and provide much for modern planners to ponder. The author concludes succinctly, stressing not only the familiar naval aspects of the operation but also the often improvised nature of defense against attack from the sea and the unique problems this entails. In so doing, he shines a fascinating and very different light on the well known amphibious operations of this century.

Each chapter opens with a perspective of the general situation from the defender's vantage point, then outlines the defensive plan, the actual execution of the battle, and both the lessons taken by the defenders at the time and observations on the implications for today.

The text is easy to follow, the maps are simple but effective, and the endnotes reflect a balanced mix of official and scholarly materials, including a substantial number of primary sources. The bibliography alone makes *At the Water's Edge* a valuable resource to any serious student of amphibious warfare.

While there are few substantive criticisms one can make of this book (the author's first) the lack of commentary on the impact of vertical assault and on the anti-landing defenses in Egypt and Kuwait will strike many readers as a noticeable void. Though the British operations at Suez are mentioned in passing, there is no discussion of either the Egyptian defenses at Port Said or the Iraqi defenses in Kuwait. With vertical assault now central to amphibious doctrine and the Iraqi defenses often cited as evidence of the ebbing future viability of the amphibious assault, this is an unfortunate gap in an otherwise thorough treatment of the subject. Egyptian and Iraqi sources and specific information about the defenses at Port Said and Kuwait are still sharply limited, making it difficult to match the pattern and documentation of the other chapters. Some commentary on each, however, would have fit well into the theme of the book and given it even more value. Perhaps this gap can be closed in a subsequent edition as Iraqi and Egyptian records become more available.

Overall, this is an original and very useful work. Its tidy organization and clear prose make it an enjoyable read; it is substantive enough for experts yet easily handled by novices as well. As such, it should become a standard part of any curriculum covering amphibious

warfare. Gatchel has done a superb job of making the case for amphibious forces and attack across the shoreline, yet he does so indirectly, remaining remarkably unbiased in his tone and the flow of his logic. His subject is one that all operational planners need to think hard about, as access to overseas bases and theaters becomes increasingly challenged in the years ahead. No serious student of warfare "from the sea" should pass this one by.

G.P. GARRETT
Lieutenant Colonel, U.S. Marine Corps

Gribkov, Anatoli I., and William Y. Smith. *Operation Anadyr.* Chicago: Edition Q, 1994. 252pp. $24.95

This is the first work to combine the military perspectives of ranking Soviet and American officers who had first-hand knowledge of the 1962 Cuban Missile Crisis (or what the Soviets called the Caribbean Crisis). General Anatoli Gribkov and General William Smith met in 1992 at one of a series of conferences that brought both sides together to analyze the actions of the superpowers during that critical event, which nearly ended in nuclear war. Motivated by their experiences in Havana, the generals individually developed expanded accounts of their involvement, supported by recently declassified documents. The result is this book, which contains both generals' perceptions and related documents, in two appendices.

General Gribkov served as a representative of the Soviet General Staff to oversee construction of the missile sites and provide situation reports to the

Minister of Defense, Marshal Rodion Malinovsky. From him one learns that this project's codename (the Anadyr is a northeastern Russian river) was part of an intelligence deception to mislead the Americans into thinking that the Cuban operation was linked to the Bering Sea. Soviet troops arrived in Cuba equipped for winter campaigning and were never given a chance to acclimate to the heat and humidity. They had to perform all the heavy labor, because of security concerns about Cuban workers. Lacking heavy construction equipment, they had to dig with shovels; with the climate and shortage of labor, this delayed construction. Nonetheless, by the time the Americans indicated that they had found the sites, all surface-to-air missiles and their radars were operational, and the nuclear warheads were under guard by the KGB.

Gribkov claims that although others had been consulted, the decision to send the missiles to Cuba was Nikita Khrushchev's alone. However, he asserts, it was a mission built entirely upon sand, with command problems that made the subsequent crisis worse. The Americans were bound to find the missiles. What was the alternative plan? There was none.

Reading Gribkov's account, one gets the strong impression that his words have been chosen carefully and that his opinions are focused. The documents provided by the Russian Ministry of Defense have been sanitized, but they have been accurately translated by Catherine Fitzpatrick. Gribkov's writing is lucid, his insights are of importance to the intelligence community, and his narrative reveals much of Soviet

military thought and its perception of world politics.

General Smith's greatest contribution to this work is his lengthy discussion (with documentary evidence, also sanitized) of the difficult relationship between President John F. Kennedy and the Joint Chiefs of Staff, which had worsened since the Bay of Pigs in 1961 and could have been disastrous to American policy. Also, Kennedy's appointment of General Maxwell Taylor as Chairman did little to relieve the tension. Taylor, who had retired, was viewed by the Chiefs of Staff as Kennedy's puppet. They did not believe that he presented military plans of action forcefully enough to Kennedy and the Executive Committee. They resented Kennedy's rejection of their plans. The Chiefs wanted both the missiles *and* Castro out of Cuba, using a strong combined operation that would complete the job begun by the Bay of Pigs. Kennedy wished only to get the missiles out. He held his course.

The Director of Central Intelligence, John McCone, comes out well in Smith's account; he alone was concerned over Cuba well before October. Smith admits to a cardinal intelligence sin: that most civilian and some military leaders saw in Cuba what they wanted or expected to see. It was that fixation, plus extremely difficult weather, that masked Soviet construction until mid-October. Smith admits that Senator Kenneth Keating's (R-N.Y.) speeches in the Senate were his wake-up call about Cuba—not military intelligence. In 1962 General Smith was an Air Force major and special aide to General Taylor.

This book is unique in that both authors were in positions of responsibility during the 1962 crisis. It belongs in the library of anyone seeking to understand better the Cuban Missile Crisis. In it are unique and interesting insights, and lessons learned by both sides of the conflict.

PAUL J. SANBORN
American Military University

Tanaka, Yuki. *Hidden Horrors: Japanese War Crimes in World War II.* Boulder, Colo.: Westview, 1996. 267pp. (No price given)

It is only in the last two or three years that there has been any indication of Japanese willingness to acknowledge guilt or responsibility for anything that happened in the Pacific during World War II. Therefore, it is a matter of satisfaction to find a work by a Japanese scholar that examines the record and accepts that the Japanese war crimes catalogue is at least as grave as in the European theatre.

One issue was that of the "comfort women." Much has been heard about those women, who were used as sexual playthings for the Japanese forces. They were conscripted and sent as camp followers to whatever theatre in which the Japanese were engaged. While the author devotes a full chapter to "Rape and War: The Japanese Experience," which is critical of Japanese actions, his effort to deflect criticism of the Japanese leaves much to be desired. He argues that since rape occurs in every war, and since many armies establish or supervise brothels for their troops (as the British

did in Egypt during World War II), the criticism of Japan is excessive and misplaced. Tanaka ignores, or does not appreciate, the difference between tolerating brothels (in which women are paid and there of their own accord) and conscripted women (who are there against their will, sent abroad and treated as sex slaves). Nor does he recognize the difference between individual acts of rape and mass rape as a matter of organized policy.

In another discussion, Tanaka provides a very detailed account of cannibalism by Japanese troops, making it quite clear that it was not an isolated practice. His explanation for it is difficult to accept, especially when he concedes that in some instances the cannibals were in fact well disciplined and often well fed. "The widespread occurrence of cannibalism," he argues, "was by Japanese soldiers who had been abandoned by their commanders. Responsibility for these crimes must rest principally with Imperial headquarters and its ill-considered ad-hoc Southwest Pacific strategy," which did not prepare the troops for the stresses and difficulties of jungle warfare. However, the same can be said of the Australian, American, British, and New Zealand commands, and their forces seem not to have been affected in the same way!

As for massacres of civilians and prisoners of war, Tanaka is under the impression that Japanese officers and soldiers were not sufficiently aware of the limitations imposed by international law (were Allied personnel more learned in this area?) and so cannot be much blamed for their actions. In the context of their belief in *gyokusai*

(glorious self-annihilation) and their devotion to the emperor, they regarded the "lives of detainees . . . as obstacles toward the successful completion of glorious self-annihilation."

Among the most horrendous crimes committed by the Japanese were their medical experiments (which General Douglas MacArthur refused to treat as warranting criminal prosecution). Tanaka explains away the doctors' actions as "doubling"—asserting that while "they maintained a conscience [the doctors] were concerned with their responsibilities to others, not to the people they experimented on. Doubling enabled them to see experimenting on prisoners as consistent with the high moral causes of saving Japanese lives and demonstrating loyalty to the emperor." Regarding the Allied accusations that the Japanese abused the Red Cross to secure immunity from attack, Tanaka suggests that such charges were "perhaps an attempt to exculpate the Allies for acts such as the bombing of Japanese hospitals."

Most of the research for this work was done while the author was a Visiting Research Fellow at the Australian National University, and the book is, therefore, primarily concerned with the treatment of Australian prisoners and civilians—although it may be presumed that Japanese behavior here was in no way unique. Tanaka uses the Australian War Crimes Commission archives, but he fails to understand that body's task. Thus he complains that trials were confined to offences against Australians or Allied personnel, and that the Japanese were not accused of war crimes against their own men or charged with the

contemporaneous murder of German missionaries.

There is much to criticise in the author's philosophising, but one must be grateful that a Japanese author has not hesitated to disclose, examine, analyse, and even deplore some Japanese actions during the Pacific War and condemn them as war crimes. Perhaps we may hope that this work indicates a true awakening of the Japanese conscience.

LESLIE C. GREEN
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Baker, David. *Adolf Galland: The Authorized Biography.* London: Windrow & Greene, 1996. 316pp. $29.95

Adolf Galland rose by ability and circumstance to become the youngest German general of the twentieth century. In November 1941, at age twenty-nine, he was appointed to command the Luftwaffe fighter arm, a position he retained for three years. Then, condemned by Hermann Goering, "Dolfo" finished the war where he began it: leading a combat unit in the air, as a two-star wing commander.

Although Galland has been the subject of previous biographies and wrote his own classic, *The First and the Last*, British author David Baker provides the definitive word. He worked extensively with Galland up to the general's death in February 1996. Baker's background in aviation literature includes some fifty books in addition to projects with NASA and the U.S. Air Force.

Throughout the text, Baker excels not only at describing Galland's

actions and motives but at placing the man in context of his time. Like so many of his generation, the young Galland was absorbed in aviation, and he survived two crashes (one nearly fatal) to fly in the Condor Legion during the Spanish Civil War. There he excelled in close air support, as he did early in World War II.

However, Galland the dedicated hunter yearned for fighters; indeed, the German term is *Jäger*. Combat success over France and Britain soon brought him to command of an Me-109 wing, Jagdgeschwader 26, which he led until his promotion to general in late 1941. At that time he was credited with ninety-four kills.

However, despite his exceptional combat success and love of the hunt, Adolf Galland was no war lover. He lost seven uncles in the First World War and two of his three brothers in the Second. With Germany burning down around him, his aircrews fought a losing battle against appalling odds, sustaining losses as high as 40 percent in aircraft and 25 percent in pilots per month. Yet morale held, as it did in the U-boat arm despite overall losses of 78 percent; there was no mutiny as in 1918. The difference was leadership—the exceptional variety represented by Adolf Galland and Karl Dönitz.

Galland's final mission, on 25 April 1945, was eventful. Flying an Me-262 jet, he scored his 104th victory, then was shot down and wounded for the third time. Following a yearlong interrogation by Allied debriefers, Galland went to Argentina to continue in aviation. He was only thirty-four years old.

Dolfo Galland developed a global following in the flying fraternity, one that included many former enemies. Baker aptly describes the former *jagdflieger*'s postwar relationships and boldly explores the man's personal attitudes toward the horrors of the Nazi regime. Essentially, Galland and his contemporaries became ultimate pragmatists, trying to stem thousand-bomber raids that destroyed German cities while millions perished in concentration camps.

Aside from the enduring respect of his former opponents, Dolfo Galland leaves an even greater legacy. Confronted with the chilling wrath of Adolf Hitler and Hermann Goering, the general of the fighters stood by his aviators, defending them from vilification as incompetents and cowards. In doing so he risked his life to preserve his self-respect: Goering had condemned him to death, but Hitler intervened and sent him off to die in combat.

The contrast between the behavior of a Luftwaffe general who literally put his life on the line to protect subordinates against unwarranted political pressures, and some contemporary leaders who seem not to know what "loyalty down" requires, is appalling. For that reason alone, this excellent biography should be required reading at war colleges everywhere.

BARRETT TILLMAN
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Bunker, John. *Heroes in Dungarees: The Story of the American Merchant Marine in World War II.* Annapolis,

Md.: Naval Institute Press, 1995. 369pp. $32.95

John Bunker's *Heroes in Dungarees* is a complete and well documented study of the American merchant marine during World War II. While Bunker provides the necessary facts to establish the importance of the essential supply lines provided by these ships, one is compelled to read this book as his tribute to his shipmates, and the many others like them, with whom he served from 1942 to 1945. His focus is on the courage, bravery, and ingenuity displayed by these men in a brutal war. The author, after his wartime service, went on to a distinguished career as a journalist, writing for the *Christian Science Monitor* and *San Diego Tribune*.

The longest continual battle of World War II, the Battle of the Atlantic, is today a dim memory. For almost six years German submarines and surface raiders attacked the merchant ships and their escorts that constituted the lifeline the Nazis were determined to destroy. Because each attack involved a relatively small number of ships, they rarely caught the public's attention. Only when the casualty lists are totaled is the magnitude of the battle realized. Until the Marines suffered their huge losses in the battles of Saipan and Tinian, no branch of the armed services sustained a higher percentage of casualties than the merchant mariners.

The merchant seamen who went down with their ships were civilians whose service was voluntary. As such, they are largely unsung and forgotten. It is Bunker's intention with this book that their contribution to the war effort receive proper recognition. For the reader who is not familiar with this aspect of the war, Bunker's book is an important contribution. The author serves the reader well with his vivid, well researched descriptions in clear concise prose, using primary sources from the War Shipping Administration files, the National Archives, the Historical Division of the Navy Department, and numerous interviews with survivors.

Bunker's opening chapter describes the early days after America's entry in December 1941, when unarmed and unescorted merchant ships sailing along the U.S. Atlantic coast were easy targets for the German submarine commanders. Although the British had developed reasonably effective means for protecting merchant shipping over the previous two years, these seem to have been largely ignored when war came to the Americans. By August 1942, the Germans had sunk 383 Allied ships in the Caribbean, the Gulf of Mexico, and off the East Coast, areas under U.S. Navy protection. Winston Churchill later wrote, "In six months U-boats ravaged American waters almost uncontrolled and in fact almost brought us to the disaster of an indefinite prolongation of the war."

Prime targets for the Germans were tankers loaded with highly volatile fuel oil. The author graphically describes the attacks and fiery deaths that awaited their crews. Even aboard ships carrying less combustible cargoes, when the engine room was hit the scalding steam from a ruptured boiler meant no escape for the "black gang." In spite of the continuous slaughter, however, the

ships kept sailing, and none was delayed by lack of crew.

Bunker examines in detail each theater. He recounts incredible feats of endurance during winter in the North Atlantic. He describes the Murmansk convoys and other efforts, often bordering on the suicidal, to supply the Soviets. One convoy, PQ 17, attracted attention because of an erroneous report that German battleships were preparing to break out into the Atlantic. Escort ships abandoned the convoy to challenge them. The merchant ships were reasonably well armed, and their naval and merchant gun crews gave a good account of themselves in what proved to be a highly uneven contest against bombing, strafing, and U-boat attacks. Of the original thirty-three ships that left Iceland, however, only ten got through. In addition to the loss of ships and crew, a hundred thousand tons of vitally needed war material was sent to the bottom of the sea.

Bunker's description of Japanese submarine attacks in the South Pacific and the Indian Ocean, where ships generally sailed unescorted, is particularly disturbing. The Germans were usually content to sink ships, and on occasion they offered help to the men in lifeboats. However, the Japanese seemed determined to leave no survivors. The author provides details of instances where surfaced Japanese submarines deliberately attempted to ram lifeboats and sprayed the occupants with machine-gun fire.

Throughout the war those who survived the destruction of their ship generally returned to the sea as soon as they were able. By the end of the war, thousands of Allied merchant ships were

delivering material that made victory possible. Fleet Admiral Chester Nimitz praised their contribution, writing, "Our requirements were numbered in the millions of barrels of fuel to be transported thousands of miles to the scene of fleet operations. Our success in keeping the fleet properly fueled was dependent upon the delivery by these commercial ships. Not once did they fail."

In the nuclear age it is improbable that another war approaching the duration and scope of World War II will ever occur, but we still have to be prepared to support American forces overseas under hostile conditions. The need for crews like those described in Bunker's book, willing to venture into troubled waters, is bound to arise someday in the future.

ANDREW E. GIBSON
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Kaufmann, J.E., and H.W. Kaufmann. *The Sleeping Giant: American Armed Forces between the Wars.* Westport, Conn.: Praeger, 1996. 216pp. $55

The authors, a husband-and-wife team who in addition to teaching at the university level have combined to write on the early phases of World War II, make two significant points about the importance of the years 1919–1939 to the victory eventually achieved in 1945. Their first is that this important era has been neglected as an entity in the military literature. Although offhandedly referred to in biographies of World War II leaders or buried in opening

chapters of histories of that war, the historical infrastructure that produced the war machine which won in 1945 has received no adequate historical treatment. This book is an effort to remedy that deficiency. The second point flows from the first. The years after winning "the war to end all wars" were ones of fiscal irresponsibility toward the nation's armed forces. Neglect and drastic cuts in appropriations marked America's attitude toward its military. The "peace dividend" attitude at the end of the Cold War has prompted a similar indifference. The authors urge Americans to remember the past and ponder the implications of relegating the military to second-class status.

In 196 well written pages of text with twenty pages of charts illustrating ships, aircraft, and armored vehicles plus dispositions of major air, land, and naval units during the period, the authors present a comprehensive overview of the U.S. armed forces during the 1920s and 1930s. The Sleeping Giant has one of the best compendiums of Fleet Problems I–XXI (1923–1940) this reviewer has ever read. The struggle to provide a viable army within the imposed framework of a merely defensive force is recounted. The fixation that tanks were offensive weapons caused the Army to coin the euphemism "combat car." Also, the problems of army aviation with dissension between the two schools of air theory are described. The heavy-bomber disciples of Italy's Giulio Douhet and Britain's Hugh Trenchard, championed by "Billy" Mitchell and his followers, are shown pitted against the ground advocates, who saw air as a supporting arm for infantry and armor —a debate that continues today.

One of the more interesting facets of the story is the parade of junior and middle-grade officers whose names were to be notable during World War II. They are mentioned in the context not of their later achievements but of their significant contributions to the development of "the Sleeping Giant." A litany of names of those who laid the foundation for the coming conflict includes Arnold, Brereton, Mark Clark, Collins, Doolittle, Eaker, Eisenhower, Halsey, Hart, Kimmel, King, Krueger, Leahy, LeMay, McNair, Marshall, Nimitz, Palmer, Patton, Spaatz, and Towers. They did not rise to high command by accident; they paid their dues along the way during the austerity of the interwar years.

This volume, however, is not all perfection. The authors reveal their lack of personal military background with several gaffes in military terminology that military professionals will easily find; one is calling ship's detachments the "Fleet Marine Force." Such occasional lapses do not detract from the worth of the book, however. It stands on its own as the initial entry into this heretofore neglected period of American military history. Let us hope that it is merely the forerunner of further in-depth attention to the time between the world wars. Any military professional who considers himself a serious student of World War II without comprehensive understanding of what happened in the decades preceding it is merely "coming in during the middle of the

movie." He can help fix that deficiency by reading *The Sleeping Giant*.

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Coletta, Paolo E. *Allied and American Naval Operations in the European Theater, World War I*. Studies in American History, vol. 7. Lewiston, N.Y.: The Edward Mellen Press, 1996. 588pp. $129.95

Paul G. Halpern's splendid *A Naval History of World War I* appeared in 1994, providing an up-to-date general survey based on thorough primary research, and it soon became an essential tool for all students of the era. Paolo Coletta's *Allied and American Naval Operations in the European Theater, World War I*, regrettably, is no match for its precursor. In fact, the reader ultimately is left to wonder what induced Dr. Coletta to write the book, where his editor and proofreader were during its production, and why the publisher issued a work in this state and at such an inflated price.

Coletta's study shows little sign of being the fruit of thorough scholarly research. Although there is an impressive, if disorganized, bibliography, it includes only a smattering of documents, all American, and even these are rarely cited. He relies far more on official histories (whose reliability and coverage is highly variable), memoirs, and secondary sources.

Coletta starts by presenting a confused and inaccurate description of the Anglo-German naval race in the prewar years. Thereafter, his coverage is geographic, providing separate chronological descriptions of naval events in the Atlantic, Mediterranean, Adriatic, and Baltic theaters from the outbreak of war to the Armistice. This approach makes it more difficult for both the reader and the author to comprehend the interplay between events in different theaters, and it leaves the impression that each operational area was essentially isolated. Furthermore, the narrative suffers from factual confusion and error, and it displays a glaring omission—operations in the Black Sea are completely ignored.

Coletta misses two great opportunities in this book. He provides greater coverage of Adriatic operations than do most general surveys, but it is marred by his excessive reliance on the Italian official naval history, which is among the most chauvinistic and bombastic of all national studies of World War I, and by his apparent ignorance of recent interesting work on the Austrian navy. Even more regrettable is the missed opportunity to offer an overall perspective of the first half of the Great War from a neutral American stance rather than perpetuating the European nationalistic biases that still flavor much of this war's historiography.

The final content problem of this study is in its errors of historicity. Much of the analysis is colored by late-twentieth-century perspectives, an approach that profoundly misunderstands the naval paradigm of the era. The most glaring example of this is Coletta's criticism of contemporary thinking on submarine warfare. It is true that unrestricted warfare on merchant shipping was ill handled by both the British and

German navies, especially early in the war. Coletta's analysis, however, misses the point that virtually no naval officers before the outbreak of war, even those who had thought deeply on the subject, in their wildest imaginings conceived of an unrestricted campaign such as was launched in 1915. It is a serious fault to impose modern thinking on participants in events of earlier times.

In addition to its problems of content, this book suffers from severe editorial omissions. There is, in fact, no evidence whatsoever of an editorial hand. The prose is replete with malapropisms, grammatical and syntactical slips, proofreading omissions, and caption errors. It appears to be a first draft put into print as it stood. With editorial attention this study could have become a worthy contribution to the literature. As it stands, it is a disgrace to its publisher, especially at its asking price.

PAUL E. FONTENOY
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McIvor, Aidan. *A History of the Irish Naval Service.* Ballsbridge, Ireland, and Portland, Ore.: Irish Academic Press, 1994. 256pp. $39.50

Aidan McIvor's book is the first history of the Irish Naval Service, published in time for the service's fiftieth anniversary in 1996. It is a scholarly work, concentrating on archival and published material.

McIvor does not have a seafaring background. He is a graduate of the University College of Wales and the London School of Economics, and he obviously was more comfortable approaching this task from the standpoint of an academic than of a practitioner.

The book properly focuses on the modern-day Naval Service, which began its life in 1946, when the government decided not to disband the wartime Marine Service but to make it an element of the Permanent Defence Forces. However, the author did not completely ignore the great naval and maritime tradition of the Irish people: he devotes the first chapter to the Celtic missionary mariners, who may have reached North America, to the Irish in foreign navies, and to Irish maritime endeavour. Who remembers that the inventor of the first operational submarine, John Holland, was from County Clare? This chapter puts the Irish people in their proper context as an island nation.

The second and third chapters deal with failed attempts to form a navy after achieving independence, the use of seaborne landings by government forces during the civil war, and the setting up of an emergency naval force at the outbreak of World War II. Even though almost a hundred pages have elapsed before one arrives at the point where today's service was formed, do not begrudge the use of those pages by the author; he uses them to paint the background for his work.

The author describes the beginnings of the Naval Service in 1946 as a time of demobilisation of manpower and disposal of ships of the wartime Marine Service. With the acquisition of three Flower-class corvettes in 1947 and the injection of new personnel, including a

retired Royal Navy officer as its first commanding officer, the future was looking bright for the new service. However, little more was done through the 1950s and 1960s, and the Naval Service entered the 1970s with only one commissioned ship. The early 1970s saw a revival, with the purchase of more ships and the commencement of a building programme for offshore patrol vessels (OPVs). The entry of Ireland into the European Economic Community brought about a renewed interest in fisheries and, more importantly for the Naval Service, fishery protection. The 1980s and 1990s saw the completion of the OPV programme, the construction of one helicopter-carrying OPV, and the purchase of two fast patrol boats from the Royal Navy. The profile of the service increased as more and more law enforcement tasks in the marine environment were added to its list of roles, particularly the task of interdicting illegal drug importations.

The book contains an interesting selection of illustrations, some of which are new to this reviewer, as well as important appendices containing ship lists and names of officers commanding the service. The book's strength is in the author's considerable amount of research. However, his lack of nautical background is apparent, especially when discussing incidents that depend on eyewitness verbal reports. The book's major weakness lies in its number of factual errors in the text and, particularly, in the appendices. For example, the hull of the *Deirdre* was not designed by the Netherlands Ship Design Organization, and the lists of officers commanding the Naval Service and

the officers commanding the Naval Base contain inaccuracies and one glaring omission. This is unfortunate in a book that, when it was published, was the only historical account of the Irish Naval Service.

The book's value is its collected archival and published material, which referred in passing to a quiet service, and brought it together in one publication. For this the Irish Naval Service owes McIvor a debt of gratitude.

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Marvel, William. *The Alabama and the Kearsarge: The Sailor's Civil War.* Chapel Hill, N.C.: Univ. of North Carolina Press, 1996. 610pp. $34.95

In recent years a number of excellent histories have examined virtually every aspect of the American Civil War. Surprisingly, virtually none has addressed the lives of the Union and Confederate sailors, who contributed so much to their respective war efforts. In *The Alabama and the Kearsarge*, noted historian William Marvel corrects this obvious imbalance. In the process, he succeeds admirably in presenting the most comprehensive coverage of the hardships of the common sailor during this country's deadliest conflict.

Marvel is no stranger to readers and students of the Civil War. His *Andersonville: The Last Depot* and his biography of Ambrose Burnside received high acclaim throughout literary circles. In his latest effort, Marvel focuses on

contemporary manuscripts, including ships' logs, and diaries and journals, to portray the sailors' Civil War. His approach is to present a parallel biography of the two ships destined to meet off the port of Cherbourg on 19 June 1864. In the ensuing engagement, the *Kearsarge* sent the most successful Confederate commerce raider to the bottom of the English Channel in less than an hour.

In the interim between its construction in Liverpool's Laird shipyard in the spring of 1862 and its sinking, the *Alabama*, commanded by Captain Raphael Semmes, captured sixty prizes and virtually ran the American merchant fleet from the high seas. In spite of Semmes's triumphs, however, life aboard the *Alabama* typified the hardships experienced by sailors throughout the war. Long voyages, meager rations, and recurring bouts of respiratory ailments, to say nothing of ever-present homesickness, led the *Alabama*'s crew to near mutiny on several occasions. By the time the ship limped into Cherbourg harbor in June 1864, the damage caused by the *Alabama* had already reached its greatest extent. By the middle of 1864, notes Marvel, so many American vessels had been sold to foreign owners or registered under other flags that the international sea lanes offered few victims for Confederate raiders.

Sailors aboard the *Kearsarge* fared little better than their Southern counterparts. Commissioned in early 1862, the *Kearsarge* made its maiden voyage in February of that year. Designed principally to seek and destroy commerce raiders, the sloop spent the next three years at sea chasing the *Sumter*, *Alabama*,

and the *Florida*. The destruction of the *Alabama* was the culmination of the cruise, but even Semmes admitted that the end of his crippled ship's career was rapidly approaching by the summer of 1864. Semmes's decision to battle the *Kearsarge* seems to have been more a matter of Southern honor than of realistic hope that he could once again put to sea to continue his voyage of destruction. Even had he won, Semmes would have been forced to return to Cherbourg for lengthy repairs.

Marvel is best at describing the climactic battle between the two ships and placing the *Alabama*'s contribution to the Confederate war effort in perspective. In his almost minute-by-minute account of the famous encounter, Marvel attributes the *Kearsarge*'s victory more to superior gunnery than to Semmes's claim of defective munitions on board the *Alabama*. Of 370 rounds fired by the Confederate raider, only a dozen took effect in the hull of the *Kearsarge*, and only ten more clipped away pieces of the Union rigging. In contrast, the crew of the *Kearsarge* riddled the *Alabama*.

In the final analysis, the *Alabama*'s principal service to the Confederacy appears to have been its effect on Southern morale, offering false hope of victory at sea and spreading sympathy for the Confederate cause around the globe. Marvel notes correctly that the commerce raiders diverted few Union vessels from the stifling blockade, which the South never had any hope of breaking without foreign intervention. With world opinion slowly turning against the Confederacy and its institution of slavery after

1863, Marvel concludes that the battle against the commerce raiders was really won by the foreign ministers, and that no one needed to die in the English Channel except to appease Southern honor.

COLE C. KINGSEED
Colonel, U.S. Army

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New from the Naval War College Press ...

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Newport Paper Number Eleven
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Recent Books

Coleman, James C. *USS* **Massachusetts** *(BB-2): One Hundred Years, Four Careers.* **Pensacola, Fla.: Friends of the USS** *Massachusetts* **(BB-2), 1995. 120pp. $8**

The four careers of "sea-going, coast-line" Battleship Number 2 have been: service on the Navy List, active and otherwise, from 1893 to 1920; use as a coastal artillery and air bombing target, scuttled in shallow water off Pensacola, 1921–1945; existence as an abandoned hulk, attractive to fish and therefore fishermen and divers from 1945 to 1993; and designation as a Florida Underwater Archeological Preserve since 10 June 1993. Judging by the author's remarkable research, the ship was never especially lucky in service. In the Spanish-American War, it saw brief action off Santiago but was coaling in Guantanamo when Admiral Cervera's fleet was destroyed; there were numerous groundings and a fatal turret explosion; a torpedo was inadvertently fired by a passing messcook; the ship was not represented, as once planned, on a $10 silver certificate; and as the last indignity, the ship was scuttled in water too deep and had to be refloated, moved, and resunk so it could be shot at. Yet it is today fortunate indeed in its friends: the organized Friends, the state of Florida, the city of Pensacola (which the ship memorably visited in its younger days), and Mr. Coleman, a writer on Pensacola history. Appendices, plates, photographs, maps. (Write The Friends of the USS *Massachusetts* (BB-2), P.O. Box 494, Pensacola, Florida, 32593-0494.)

Eales, Anne Bruner. *Army Wives on the American Frontier.* **Boulder, Colo.: Johnson Printing, 1996. 210pp. $16.95**

The story of Army wives in the taming of the nineteenth-century American frontier is one rich with vitality, courage, and human dimensions. Army wives left the comfortable world of the East, and with humor, love, and guts dealt with winter storms, summer heat, drought, flood, strange food, wild animals, and Native Americans whose reactions were often quite unexpected. They raised children and buried too many. In thirty years they saw the transformation of the American West from a raw frontier to one traversed by the railroad and the telegraph. Afterwards, many looked back on those days as the most exciting times of their lives. Anne Eales has provided a wonderfully detailed account, drawn from the letters and stories of those who lived it. This work is a major contribution to the history of that period.

Francillon, Rene. *The Naval Institute Guide to World Military Aviation, 1995.* **Annapolis, Md.: Naval Institute Press, 1995. 786pp. $125**

Rene Francillon, a frequent writer on aviation subjects and with long experience in several aspects of the aviation industry, has produced in this book a remarkable combination of two kinds of reference data. One is a tabular listing of characteristics of individual aircraft types—manufacturer, dimensions, program history, variants, performance, etc.—362 of them, in alphabetical order. There have, of course, been a number of such compilations, but the other half of the book is much less familiar, certainly in unclassified sources: a listing of air forces, with their orders of battle. This section gives under each nation the name, subordination, location, and types of aircraft for each squadron, wing, flight, etc., and also tabulates estimated, and sometimes projected, totals ("census") for each type. Interspersed throughout the book (which is current, with the addendum, through September 1994) are over a thousand photographs and 115 line drawings and diagrams. Introductions to each part by Mr. Francillon, indices, lists of abbreviations and of foreign or variant aircraft names.

Friel, Ian. *The Good Ship: Ships, Shipbuilding and Technology in England, 1200–1520.* **Baltimore, Md.: The Johns Hopkins Univ. Press, 1995. 208pp. $35.95**

In a well illustrated and well designed book, Ian Friel has made a substantial contributions to our understanding of England's leadership in the development of rigging and ship construction in the medieval period. He shows how Englishmen contributed to the broad developments in northern Europe that eventually led to the great European voyages of discovery and large seagoing navies. Friel concentrates on two major aspects of this story: first, in terms of operating power, the innovation of using two or more masts in place of a single mast with square sails; second, in terms of ship construction, the adoption of skeletal framing, in the transition from clinker to carvel construction. Supporting his argument with excellent illustrations of medieval life, the author includes an examination of the social and economic forces that lay behind the impetus for shipbuilding, and of the conditions under which shipyard workers labored.

Keegan, John, and Andrew Wheatcroft. *Who's Who in Military History: From 1453 to the Present Day,* **rev. ed. New York: Routledge, 1996. 340pp. $49.95**

This alphabetical reference is one of nine in a "Who's Who" series published variously by Routledge and the Oxford University Press. This volume was originally published in 1976 and revised in 1987; the present edition takes matters up to the end of the Persian Gulf War. Keegan, the well known historian and author, is now the defense editor of *The Daily Telegraph*; Professor Wheatcroft

teaches at the University of Stirling. The book's beginning year, 1453, marks not only the conventional end of the Middle Ages but also the dawn of the gunpowder era; the cutoff, 1991, reflects the authors' conviction that no one since then "merits inclusion." As many entries as there are in 340 two-column pages, they are the survivors of a rigorous selection process. Keegan chose four types of figures: "The great commanders" of "famous victories," those who less conspicuously laid the groundwork, the thinkers, and the technocrats. There is also a fifth category, individuals whose places in history are, though firm, ignominious—the George B. McClellans. Glossary, and nine maps.

Laur, Timothy M., Steven L. Llanso, and (ed.) Walter J. Boyne. The _Army Times, Navy Times, Air Force Times Encyclopedia of Modern U.S. Military Weapons_. New York: Berkley Books, 1995. 496pp. $39.95

This convenient look-up reference was published in association with the Army Times Publishing Company, which produces the three title periodicals. Colonel Laur, USAF, Retired, once of the Defense Intelligence College faculty, is now the editorial director of the U.S. Naval Institute Military Database, and Mr. Llanso is responsible for a section of that project. The editor, also a retired Air Force colonel, is a frequent writer and consultant on defense subjects.

The foreword asserts that there are "listings for all U.S. weapons anywhere in the world," presumably (since the C-47 is given as an example) in the service of any nation. That would mean most everything fielded by this nation since World War II; but that does not appear to be the case. Rather, the book contains entries on just what the title promises, "modern U.S." systems. They are organized in sections for aircraft, artillery and guns, ground combat vehicles, missiles (and rockets and bombs), strategic missiles (in an appendix), naval mines and torpedoes, sensor and electronic warfare systems, and classes of ships and submarines (a second appendix lists individual vessels). Photographs, but no index.

Manning, Ancell R., with Christine M. Miller. _The Biographical Dictionary of World War II Generals and Flag Officers: The U.S. Armed Forces_. Westport, Conn.: Greenwood, 1996. 720pp. $95

Whereas many biographical reference works disclaim any intention to have been comprehensive, the coauthors here have attempted (as, they believe, has not been done before) to provide an entry on every single general or flag officer that served the United States in World War II. The cutoff dates are 7 December 1941 and 2 September 1945; paragraph-length listings are given not only for regular officers but those called up from the reserves, from retirement, and directly from civilian life. The Army, Army Air Force, Navy, Marine Corps, Coast Guard, and National Guard are all given chapters. Ancell (author of _Who Will_

Lead? [Praeger, 1995]) and Miller are both freelance writers. Appendices listing birthplaces and birthdates, and generals or admirals who died in the war, index.

Ritchie, G.S. *The Admiralty Chart: British Naval Hydrography in the Nineteenth Century, A New Edition.* **Edinburgh: Pentland Press, 1995. 444pp. £19.50**

When Admiral Ritchie's book was first published in 1967, readers around the world acclaimed it as a well written and exciting tale, accurately portraying the activities of the Royal Navy's hydrographic service in the nineteenth century. Nearly thirty years later, the former Royal Navy's hydrographer's book remains readable and enjoyable, and a valuable reference work. Andrew David has enhanced this new edition with an interesting introductory essay and a number of small corrections to the text, along with a revised and updated bibliography.

Rogozinski, Jan. *Pirates! Brigands, Buccaneers, and Privateers in Fact, Fiction and Legend.* **New York: Facts on File, 1995. 398pp. $45**

Pirates! is a handsomely printed, attractively illustrated, and fun-to-read look-up reference for piracy—not only that of the historical record but that of fiction, drama, poetry, mythology, and, conspicuously, the movies (there are four entries for *Peter Pan,* and three for Captain Hook). Paragraph-length descriptions and assessments are given for individuals, ships, places (whether factual, fictitious, or ambiguous), concepts (especially in law), weapons, titles of stories, nautical terms, and even picturesque and apocryphal piratical sayings. (For "Shiver my [me?] timbers," see page 317.) The research is informed by Dr. Rogozinski's view that pirates were nothing like so revolting in fact as in fiction, especially B-movies, in fact little more so than "anyone else." The author's credentials are impressive—a doctorate in social and cultural history from Princeton, several book credits—but the argument is weakened by a howler in the second sentence of the preface: that pirates "have ceased to scour the seas." That they certainly have not done.

Schoenfeld, Max. *Stalking the U-boat: USAAF Offensive Antisubmarine Operations in World War II.* **Washington, D.C.: Smithsonian Institution Press, 1995. 231pp. $37.50**

This book is a detailed account of the operations of two unique U.S. Army Air Force units, the 479th and 480th antisubmarine groups, during the short period of their existence. In 1942, antisubmarine (ASW) operations had mixed results against the U-boats. The unwillingness of British and American strategic bombing advocates to release long-range aircraft such as the B-24 for ASW operations severely hampered prosecution of German submarines, as did the failure of the Navy to learn from hard-won British experience against the

U-boats. Finally, in September 1942, General George Marshall directed the organization of the Army Air Force Antisubmarine Command as a stopgap measure.

The 479th and 480th groups operated from England and later from North Africa, with some success against U-boats transiting from French bases in the Bay of Biscay. This book describes those operations in detail, including U-boat kills and aircraft losses to accidents and enemy action. It also discusses the technical equipment, operational techniques, and doctrine the groups used.

In the end, the two groups succumbed to familiar role-and-mission conflicts. By the time of the creation of the 10th Fleet, dedicated to ASW operations in the Atlantic, in May 1943, the Navy had overcome many of its early operational and organizational failures. When the Navy further began to consider conducting "strategic bombing" missions in the Pacific using its own B-24s, U.S. Army Air Force (USAAF) leaders saw the threat to their institutional *raison d'être*. Senior USAAF and Navy leaders concluded an agreement in June 1943 in which the Navy took on exclusive responsibility for ASW while the Army Air Forces assumed strategic bombing primacy. The two groups continued to operate until October 1943 when Navy ASW squadrons arrived to relieve them. Neither the Navy nor the Air Force has had any reason since then to revisit this odd little footnote to history.

Sharp, Walter Gary, Sr. *UN Peace Operations: A Collection of Primary Documents and Readings Governing the Conduct of Multilateral Peace Operations.* **New York: American Heritage Custom Publishing Group, 1995. 485pp. (No price given)**

Professor Sharp of the Georgetown University Law Center, and a judge advocate officer in the grade of lieutenant colonel in the U.S. Marine Corps, has assembled in this book texts that he believes will "frame the context for a vigorous discussion of the law which governs the conduct of multilateral peace operations." He envisions its use by graduate law students, war college students, and "practitioners" in both the legal and military professions. His selections—primary documents and, mostly, reprinted journal and newspaper essays and articles, variously concerning UN peace operations—are grouped in thirteen chapters: evolution and structure; international legal authority; the applicability of international law to UN forces; their derivative authority; their status and protection; their responsibilities and liabilities; international logistics; the International Court of Justice; a RESTORE HOPE case study; legal issues of strengthening UN peace operations; regional and nongovernmental organizations; national implementation of UN authority; and a conclusion, comprising essays by the editor and Richard K. Betts. Glossary of abbreviations.

Smith, Gene A. *For the Purposes of Defense: The Politics of the Jeffersonian Gunboat Program.* **Newark, N.J.: Univ. of Delaware Press, 1995. 185pp. $35**

This book, Gene Smith's Auburn University doctoral thesis, is a valuable contribution to the literature on American naval policy in the early republic. Examining the politics and the ideology underlying the commissioning of small, shallow-draft vessels under President Thomas Jefferson, Smith is able to correct much of the misunderstanding about Jefferson's intentions that late-nineteenth and early-twentieth-century naval officers, as well as later historians, perpetrated by concentrating on the development of a large battle fleet. As Smith shows, the gunboats were only a small part of Jefferson's fundamental policy and strategy, a larger concept that was never fully implemented. Jefferson undertook the gunboat plan at a time of financial difficulties and as part of his idea for an integrated defense policy that included larger blue-water vessels, coastal and harbor fortifications, and a nationwide militia. Congress, however, authorized only the gunboats. Since it was obviously impossible to carry out Jefferson's full concept for national defense, naval historians have not until now fully understood the strategic and political dilemma. Instead, they have incorrectly tended to ridicule the gunboats as part of an anti-navy policy. Smith has gone far to correct this major misunderstanding in American naval history.

In addition, Smith's small book directly adds conceptual depth and serves as a fine complement to Spencer C. Tucker's detailed study of the design, construction, and operations of these gunboats, *The Jeffersonian Gunboat Navy* (University of South Carolina, 1993).

Symonds, Craig L., and William J. Clipson (cartog.). *Historical Atlas of the U.S. Navy.* **Annapolis, Md.: Naval Institute Press, 1995. 241pp. $39.95**

Professor Symonds (a member of the Naval Academy history faculty and formerly of the Naval War College) traces his impulse to write this book to three decades ago, when he came across an atlas of the wars of the U.S. Army and wondered why there was not such a volume for the Navy. With the assistance of William Clipson, formerly of the Naval Academy graphics staff and now a freelance cartographer, he has produced an impressive book. The ninety-four annotated color maps are organized into ten chronological parts, beginning with the Revolution and ending with a "Pax Americana" that he dates from 1980; the most recent campaign covered is DESERT STORM (wrapping the naval contribution into the air war map). The plurality of maps are in the World War II section. Symonds has provided a concise introduction to each of the ten parts, as well as a commentary and background for each individual map (on facing pages).

The author regrets that the maps are not detailed enough to be called, as he would have preferred, "charts." For those, however, wishing not to navigate from them but look up information, they will seem very detailed indeed. The work is a very handy reference for students, scholars, readers, and (not least) editors. Index.

Stenbuck, Jack, ed. *Typewriter Battalion: Dramatic Frontline Dispatches from World War II*. New York: William Morrow, 1995. 397pp. $23

It has become fashionable to republish World War II correspondence by famous reporters. *Typewriter Battalion* is another of these collected essays. In times when media-military relations often spell controversy, these collections remind us that relative harmony once prevailed between the pen and the sword.

This book includes some great war correspondence. The editor has selected breathtaking reports, including E.Z. Dimitman's (*Chicago Sun*) account of the visit by Germans to the Dachau concentration camp and their appalled reaction to the horrible activity that had taken place on their doorstep; Joseph C. Harsch's (*Christian Science Monitor*) surreal description of the Japanese attack on Pearl Harbor; several gripping articles on the Italy campaign; and W.H. Lawrence's (*New York Times*) precise but unemotional description of the Nagasaki atomic bombing mission.

Despite these gems, the overall book is disappointing. First, the front-line dispatches tell the same story over and over again—of people under fire, courage and glory, heroism and cowardice, horror and fear. Typical of this coverage is Walter Cronkite's piece about a bombing mission over Germany: "It was a hell 26,000 feet above the earth, a hell of burning tracer bullets and bursting flaks, of crippled flying fortresses and flaming German fighter planes." These reports are so close to the action that they do not bring to the reader a sense of what is really going on. They narrowly relate what a platoon is doing, focusing on personal drama. With such a perspective, the significance of the battles is not evident, and most accounts remain only remotely informative. For example, from the three reproduced articles, the reader can hardly grasp how big, daring, and difficult a mission was. If anything, this book clearly demonstrates that front-line reporting is not necessarily the key element of good media coverage.

Moreover, this work suffers from some regrettable choices. On the one hand, to help put the articles in perspective, Stenbuck offers bibliographical sketches of each reporter. On the other hand, he fails to provide the necessary elements for a good analysis of their reports and does not place the selected articles in a broader context. As a result, it is difficult to appreciate their validity. Also, nowhere does the author explain why he chose these seventy-four articles over the thousands published.

Summers, Harry G., Jr. *Persian Gulf War Almanac.* **New York: Facts on File, 1995. 301pp. $35**

Colonel (of infantry, as the title page emphasizes) Summers has published almanac-type books with Facts on File on Vietnam and Korea, but as he notes in his introduction, this is the first on a war in which he did not participate. The present book, which the publisher believes to be the first comprehensive reference on the Gulf war, draws heavily on media reporting; the bulk of his acknowledgments are to journalists and news organizations. Of the book's three parts (not four, as the blurbs and dustjacket have it), the first is a concise discussion of the theater: geography and history, and the "pol-mil run-up" to war. Part II is a tabular chronology, from the Arab Cooperation Council meeting of 19 February 1990 to the repatriation of thirty-five coalition prisoners on 5 March 1991. Part III, however—"The Persian Gulf War: A to Z"—is what you buy the book for. Its 233 pages of alphabetized entries address not only weapons (the "humvee"), terms of art ("regiment"), personalia (Lieutenant General Frederick Franks), units (VII Corps) and engagements (Khafji, Battle of), but issues (women in the military) and controversies (the Al-Firdus bunker). Each of these three sections lists further readings; after Part III follows an extensive bibliography. Index, twenty maps, sixty-eight photographs, subject and armaments indices.

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Winners of the
Hugh G. Nott Prize
For 1996

The President of the Naval War College has announced the winners of prizes for the finest articles (less those on historical subjects) appearing in the *Naval War College Review* in 1996:

• First Prize ($500), Lt. Cdr. Ulysses O. Zalamea, U.S. Navy, for "Eagles and Dragons at Sea: The Inevitable Strategic Collision between the United States and China" (Autumn).

• Co-Runner-Up ($250), Lt. Col. Arthur A. Adkins, U.S. Marine Corps, for "Doctrine for Naval Planning: The Once and Future Thing" (Winter).

• Co-Runner-Up ($250), Rear Adm. Eric A. McVadon, U.S. Navy, Ret., for "China: An Opponent or an Opportunity?" (Autumn).

Winners of the
Edward S. Miller History Prize
For 1996

Through the generosity of the distinguished historian Edward S. Miller, the President of the Naval War College has awarded a prize to the author of the finest article on a historical subject to appear in the *Naval War College Review* in 1996.

• The winner ($500) is Dr. Peter J. Woolley, for "The Role of Strategy in Great Power Decline" (Winter).

• Honorable mention was given to Robert J. Schneller, Jr., for "A Littoral Frustration: The Union Navy and the Siege of Charleston, 1863-1865" (Winter).

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